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Drake, F. R., and Ebaugh, F. G.: Ann. New York Acad. Sc. *61*:198 (April 15) 1955.

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Harris, R.: Ann. New York Acad. Sc. *59*:95 (April 30) 1954.

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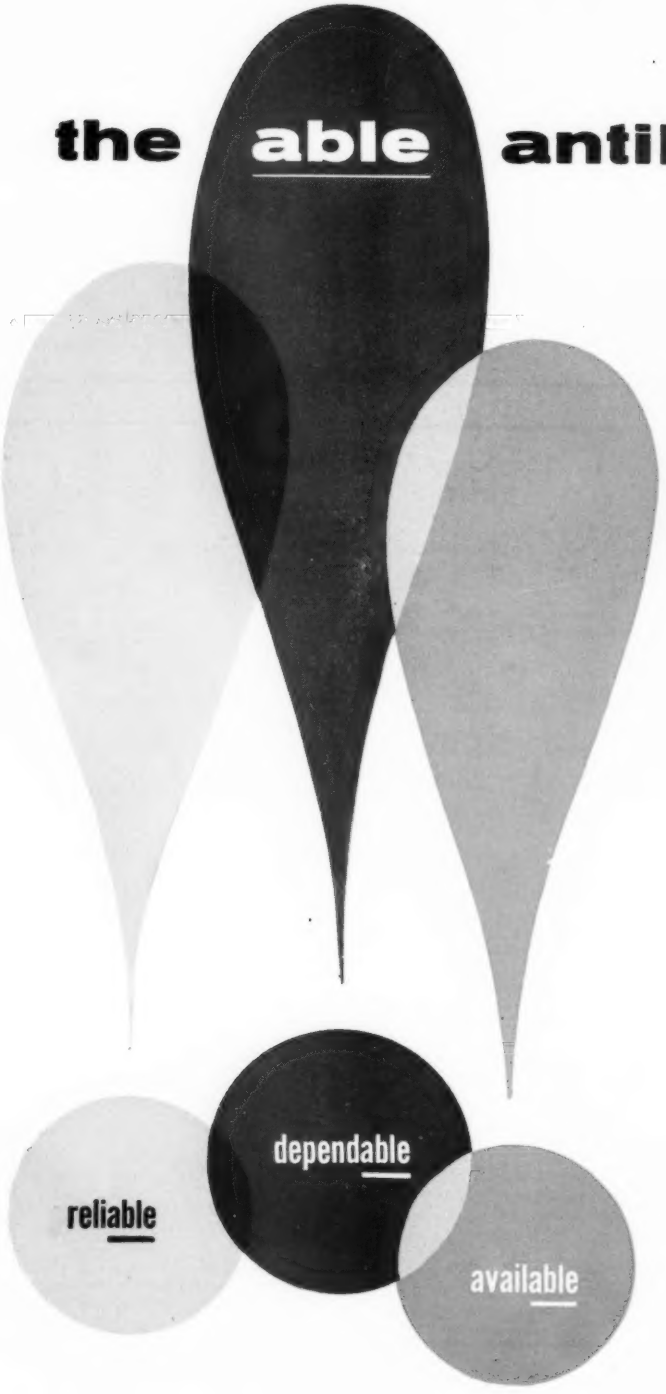
Neither the Editor nor the Publisher of the Journal of the American Medical Women's Association is responsible for any statements made or opinions expressed by any of its contributors.

JOURNAL OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION is published monthly by the American Medical Women's Association, Inc., at 136 4th Ave., North, Nashville 3, Tenn. Entered as second class matter at the Post Office at Nashville, Tennessee, under the Act of August 24, 1912. Acceptance for mailing at special rates of postage provided for in Section 1102, Act of October 8, 1917, and authorized July 15, 1918. Copyright 1955 by the American Medical Women's Association, Inc. Subscription, $5.00 per year; $1.00 single copy.
EDITORIAL AND ADVERTISING OFFICE, Journal of the American Medical Women's Association, 1790 Broadway, New York 19, N. Y. Telephone Judson 6-8683. Advertising Manager, Joseph Bourgholtzer, Box 281, Suffern, N. Y. Telephone Cragmere (N.J.) 8-3870.



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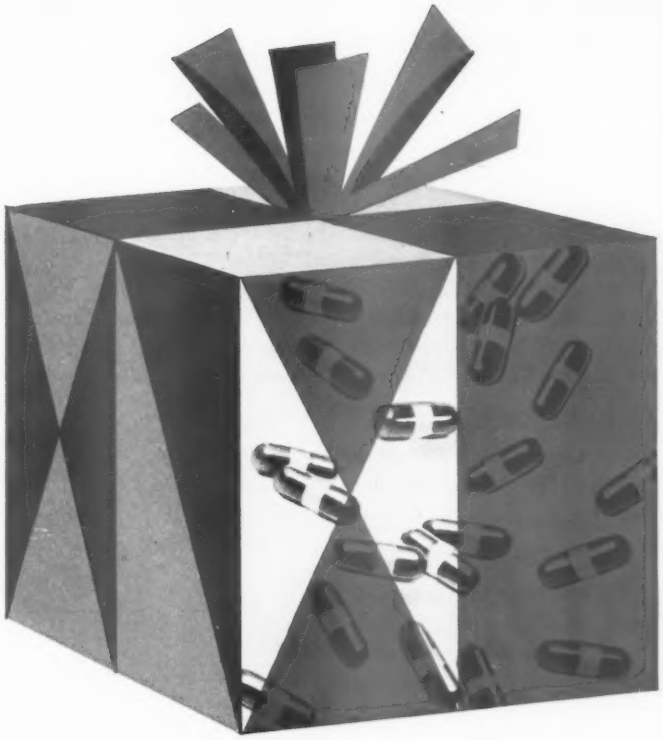

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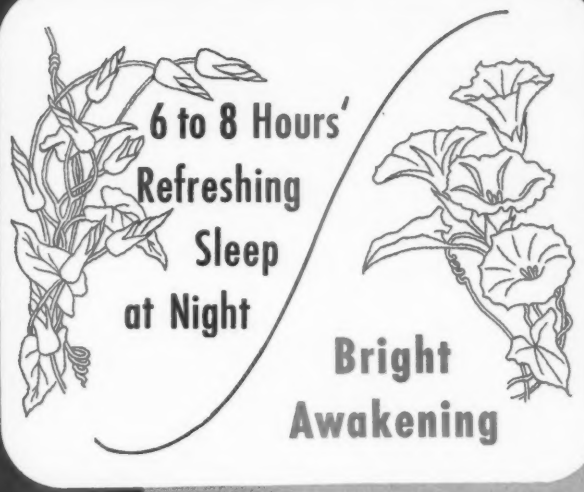

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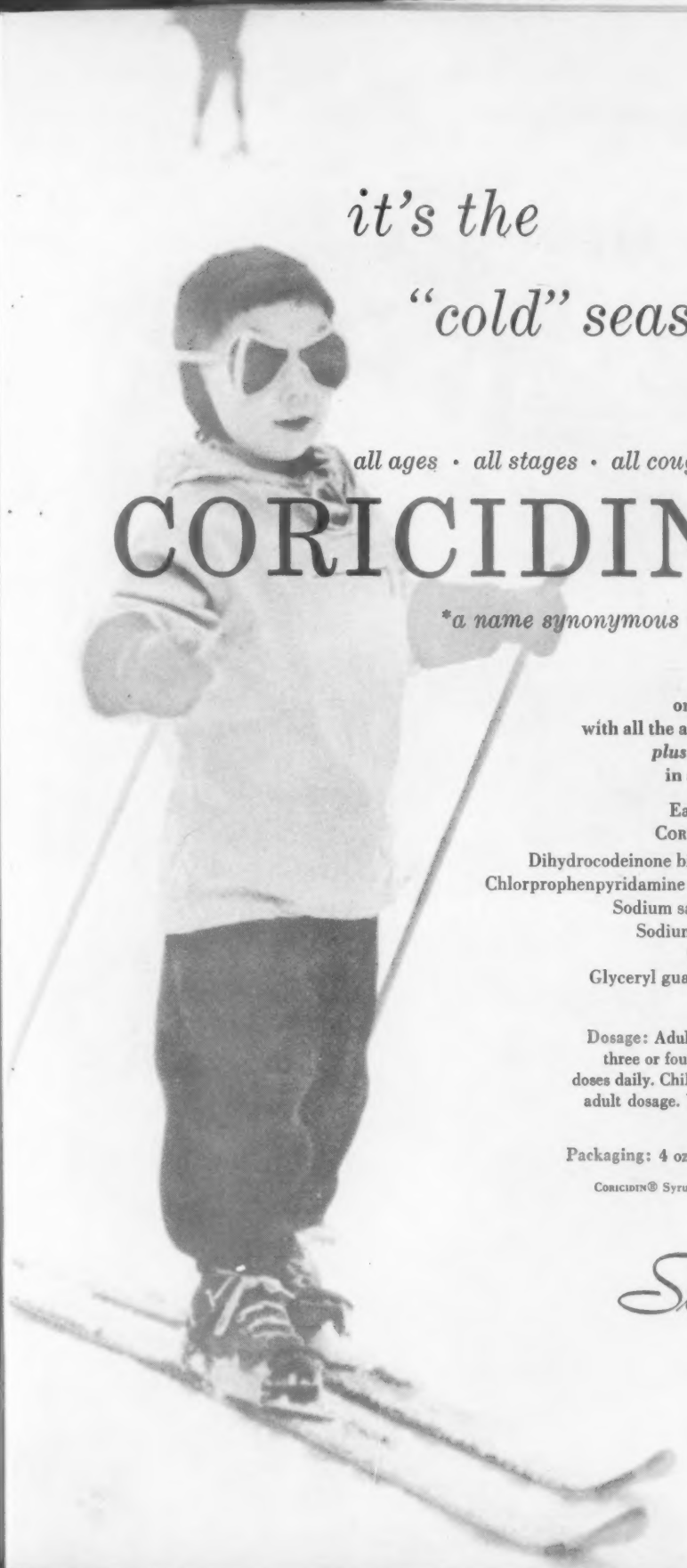

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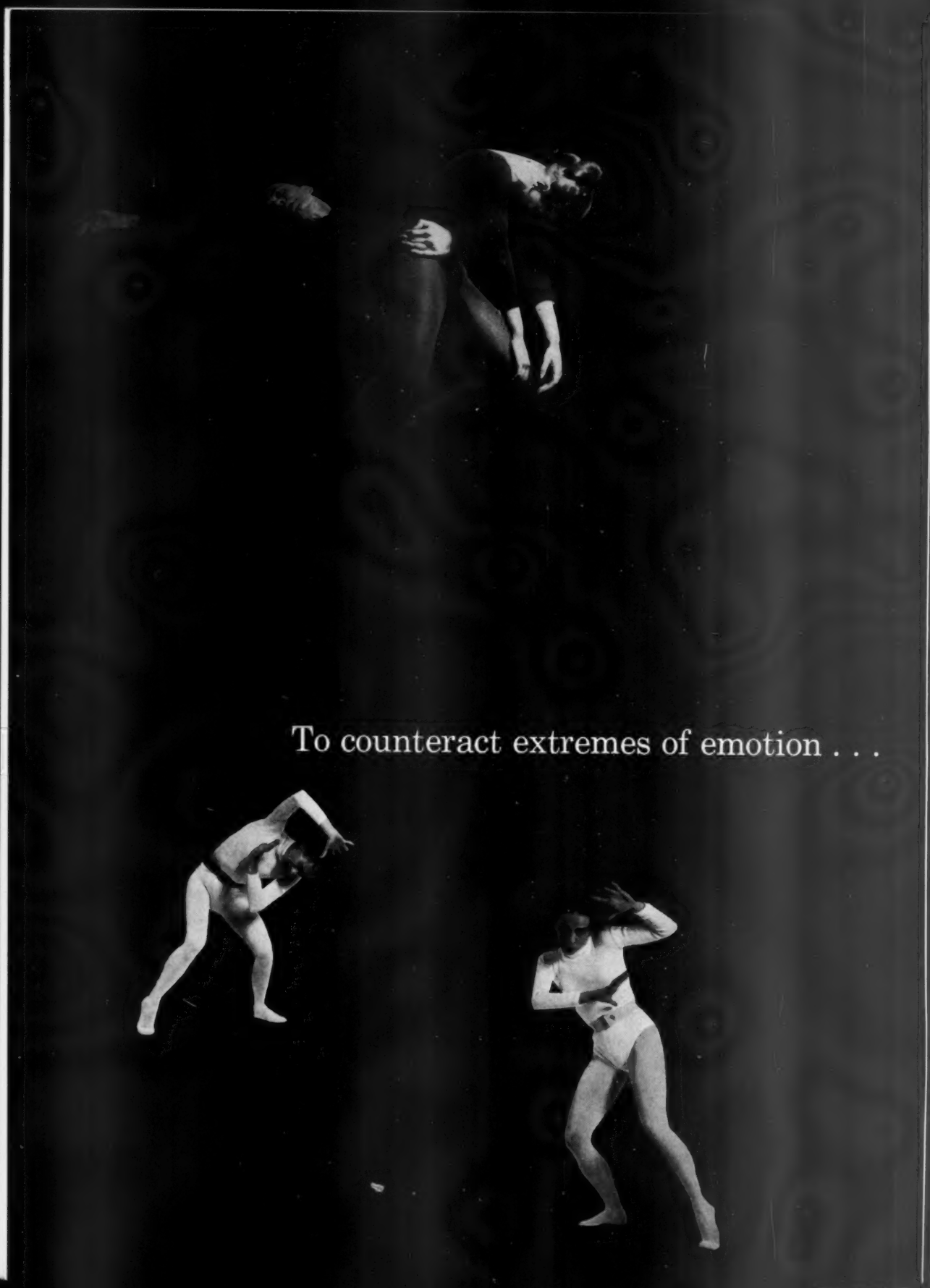
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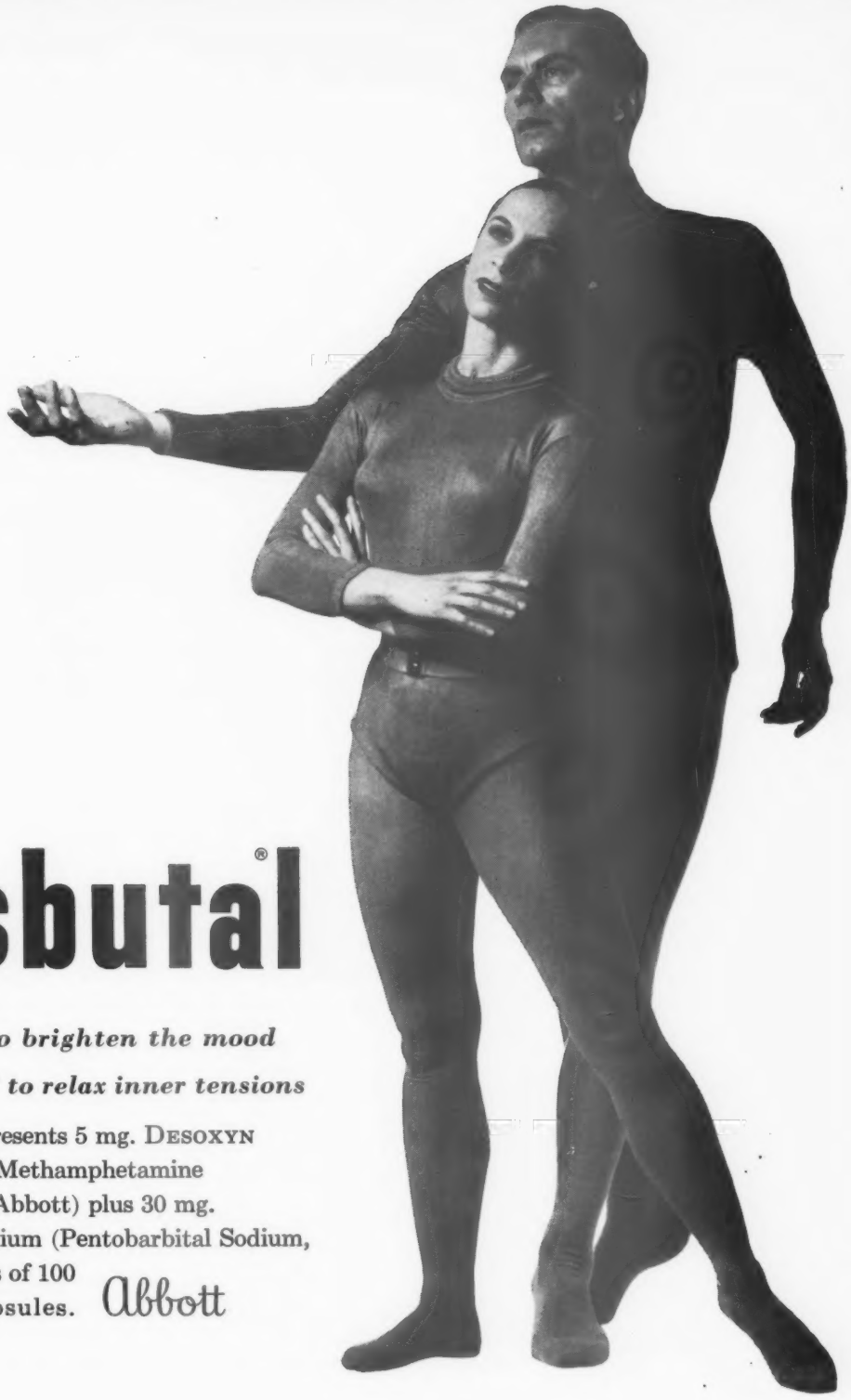

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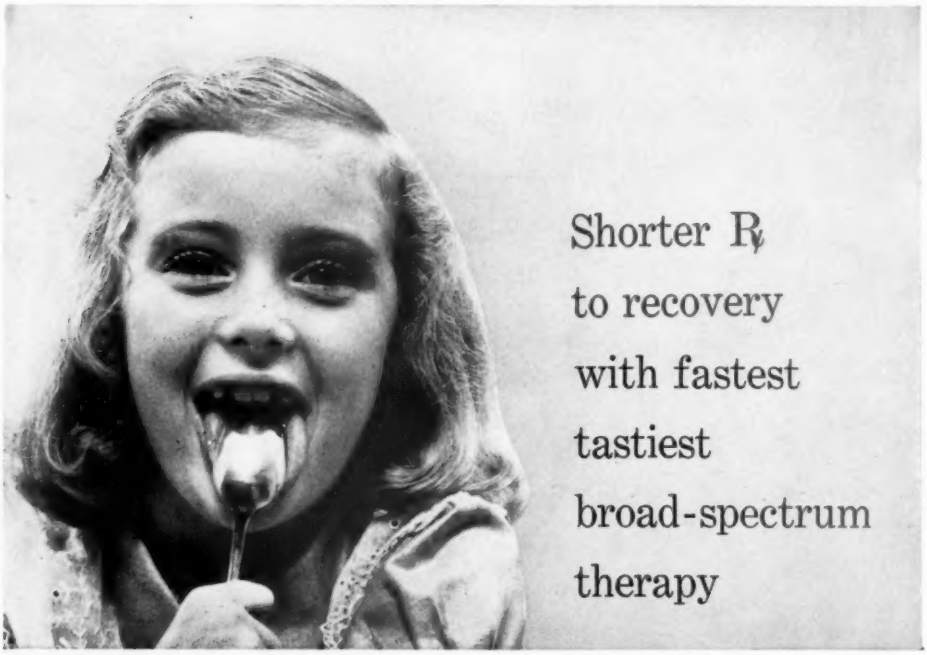

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Evangeline E. Stenhouse, M.D., Chicago, Ill.
Rose V. Menendian, M.D., Chicago, Ill.
Emelia Giroytas, M.D., Chicago, Ill.
Emily Svoboda, M.D., Chicago, Ill.

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Gail Englander, M.D., Cincinnati, Ohio
Marjorie Grad, M.D., Cincinnati, Ohio
Rae Hartman, M.D., Cincinnati, Ohio
Gwen Morris, M.D., Cincinnati, Ohio
Jeanne Nitchals, M.D., Cincinnati, Ohio
Roselyn Touff, M.D., Cincinnati, Ohio

Woolley Memorial Lecture
Theresa Scanlan, M.D., New York, N.Y., *Chairman*

Survey of Women Physicians
Frances Hannett, M.D., Chicago, Ill., *Chairman*

Necrology
Lucille Snow, M.D., Chicago, Ill., *Chairman*
Phillis Bourne, M.D., San Francisco, Calif.
Alice Phillips, M.D., Boston, Mass.
Margaret Stanton, M.D., Chicago, Ill.

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Ella Fraser Andrews, M.D., Silver Spring, Md.

Essay Contest
Ruth Hartgraves, M.D., Houston, Texas, *Chairman*

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Jeanne E. Nitchals, M.D., 2205 Beechmont Avenue, Cincinnati.
Illinois: Rose Menendian, M.D., 2400 West Morse Avenue, Chicago.
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American Medical Women's Association, Inc.

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Secretary: Alma Jane Speer, M.D., 3232 Garfield St., N.W., Washington, D.C.

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Secretary: Mary Stephens, M.D., 55 East Washington St., Chicago, Illinois.

Meetings held monthly.

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Secretary: Mary Matthews, M.D., 8106 Harford Rd., Baltimore 14.

Membership Chairman: Pearl L. Scolz, M.D., 11 Blythewood Road, Baltimore 10, Md.

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Secretary: Gertrude O. Ash, M.D., 866 South 13th Street, Newark 8.

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President: Miriam Luten, M.D., 308 Taylor St. Bldg., (919 Taylor Street) Portland 5.

Secretary: Dorothy Vinton, M.D., 2455 N.W. Marshall, Suite 5, Portland 10.

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Secretary: Louise M. Camel Farrage, M.D., 478 Elmwood, Council Bluffs, Iowa

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Secretary: Elaine K. Pedersen, M.D., 6040 W. Lisbon Ave., Milwaukee.

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President: Gail Englander, M.D., 3729 Reading Road, Cincinnati 29.

Secretary: Gwendolyn Morris, M.D., 421 Burns, Wyoming 15.

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Secretary: Margaret Siems, M.D., 233 A St., San Diego.

Meetings held every other month on fourth Thursday.

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Secretary: Julia V. Lichtenstein, M.D., 2 West 87th St., New York.

Membership Chairman: Adelaide Romaine, M.D., 35 West 9th Street, New York.

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Secretary: Kathryn Hoffman, M.D., Schoffield Bldg., Cleveland

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Secretary: Hilda Kroeger, M.D., Magee Hospital, Pittsburgh 13.

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Secretary: Elizabeth Olmstead, M.D., 568 Lafayette Ave., Buffalo.

Membership Chairman: Marguerite P. McCarthy-Brough, M.D., 1811 West Genessee Street, Syracuse.

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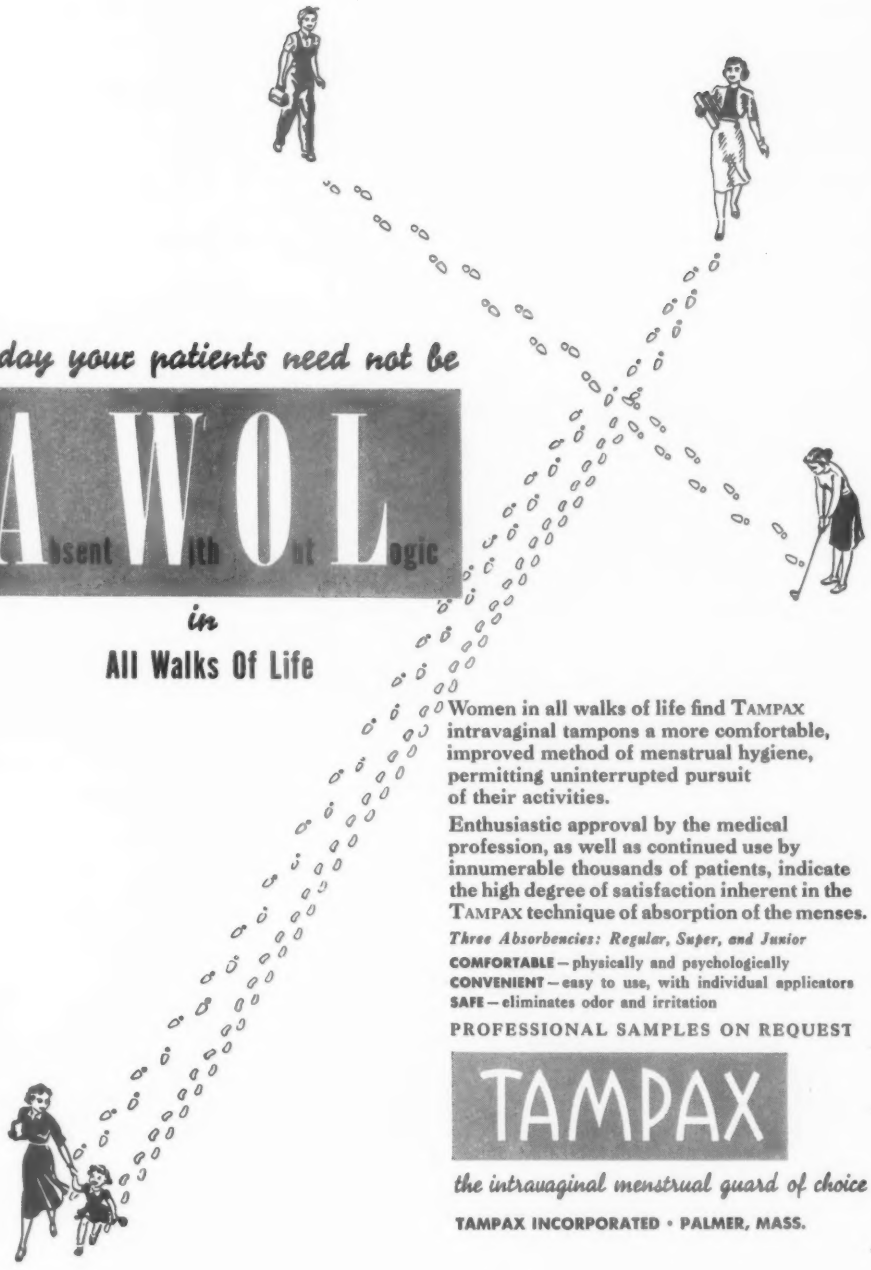
President: Ruth Wolcott, M.D., Spirit Lake.

Secretary: Jean Glissman, M.D., 1068 42nd St., Des Moines.

Meetings held each April, in conjunction with state medical meeting.

(Continued on page 20)



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Secretary: Kathryn O'Connor, M.D., 14301 Grand River, Detroit 27.

Meetings held five times a year.

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President: Elsie H. Ferrel, M.D., 690 East California, Pasadena.

Secretary: Pauline Roberts, M.D., 3460 Virginia Road, Los Angeles 16.

Membership Chairman: Elizabeth Mason-Hohl, M.D., 1234 Vermont Avenue, Hollywood.

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President: Mary T. Glassen, M.D., Phillipsburg.

Secretary: Ruth P. Spiegel, M.D., Formosa.

Next meeting will be held on call.

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Secretary: Marjory A. Meyer, M.D., 916 Edmonds Avenue, Drexel Hill.

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President: Della G. Drips, M.D., Oronoco.

Secretary: Hilda Luck, M.D., 531 N. 4th Street, Mankato.

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Secretary: Eleanor Bundy, M. D., 706 Church Street, Decatur.

Membership Chairman: Virginia Tuggle, M.D., 822 Columbia Drive, Atlanta.

Meetings held third Saturday, alternate months.

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Secretary: Anah C. Wineberg, M.D., 3120 Webster St., Oakland 9.

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1. Alt, H.L.: Anemia (Chronic Iron Deficiency), in Conn, H.F.: Current Therapy 1952, W. B. Saunders Co., p. 200.

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Secretary: Betty Jean McBride, 800 South 20th Street, Birmingham, Alabama.

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President: Betty Ann Lowe, University of Arkansas School of Medicine, Little Rock, Arkansas.

Secretary: Betty Jane McClellan, 222 West "G" Street, Park Hill, North Little Rock, Arkansas.

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Secretary: Yvonne Mohlman, 6928 Miami Bluff Drive, Mariemont, Ohio.

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Secretary: Barbara Castleberry, Medical College of Georgia, Augusta, Georgia.

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Secretary: Mary Rorro, 148 North 15th Street, Philadelphia, Pennsylvania.

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Secretary: Consuelo Sousa, 234 Wheatley Hall, Howard University, Washington 1, D.C.

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Secretary: Frances Taylor, 1160 N. State Street, Chicago, Illinois.

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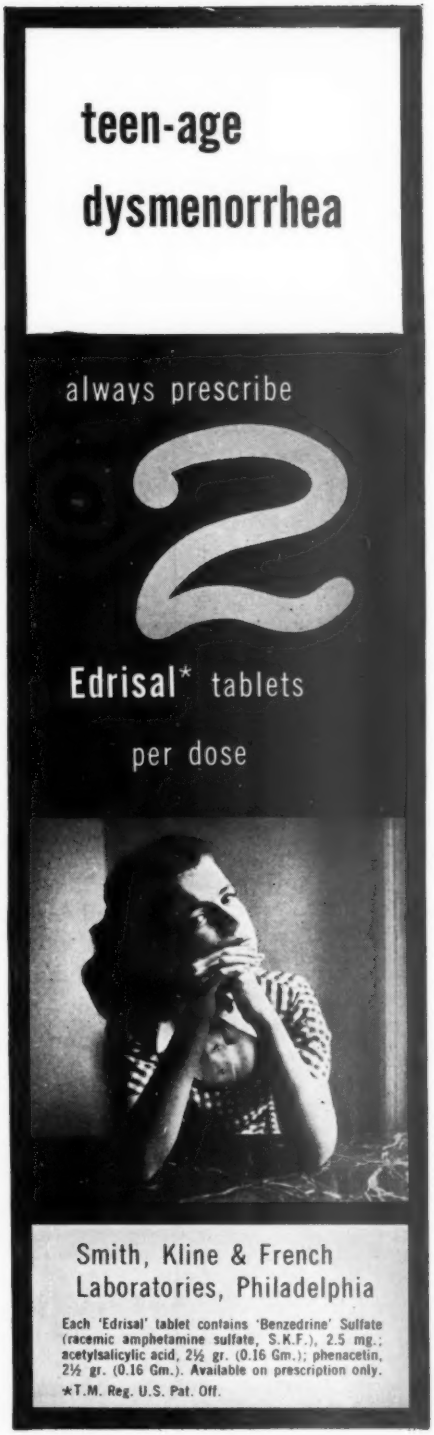
Secretary: Kathryn Williams, 1610 19th Street, N.W., Washington, D.C.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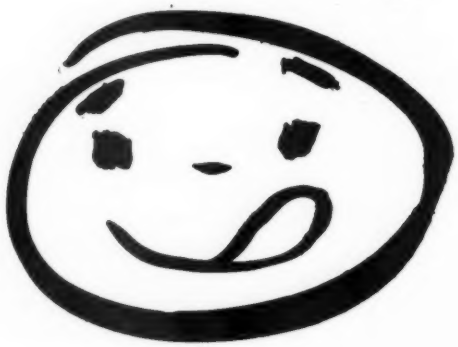

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Past President: Dr. Ada Chree Reid, 118 Riverside Drive, New York 24, U.S.A.

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Dr. Inger Haldorsen, Rikard Nordraksgtn 4, Bergen, Norway.

Dr. Anna Jacob-Peller, 23 Mazastr, Tel-Aviv, Israel.

Dr. Fe del Mundo, 34 Kitanlad, Quezon City, Manila, Philippines.

Dr. Anna Walthard-Schaetti, Eierbrechstr. 71, Zurich 7, Switzerland.

Dr. Marion Hilliard, 716, Medical Arts Bldg., Toronto, Canada.

* * * * *

National Corresponding Secretary to the Medical Women's International Association:

M. Eugenia Geib, M.D., 1277 Clinton Place, Elizabeth, New Jersey.

CONSTITUTION OF THE AMERICAN MEDICAL WOMEN'S ASSOCIATION, INC.

Article III, Section 1a. Active Members "shall be members of a Branch, if any local Branch exists; if not, they may be Members-at-large."

Article III, Section 6. Associate Members "shall be: (1) Medical women in the first year of practice; (2) women interns, residents-in-training, and fellows. Associate members shall not pay dues and shall have all privileges of memberships, except voting, holding office, and membership in the Medical Women's International Association."

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All members receive the official publication, the Journal of the American Medical Women's Association. Life and Active members receive membership in the Medical Women's International Association.

Signature.....

Endorsers are required only if applicant is NOT a member of a State or County medical society. Endorsers must be members of American Medical Women's Association.

Endorser: 1. ..... Address.....

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Checks payable to the American Medical Women's Association, Inc. must accompany application. Mail to Treasurer, A.M.W.A., 1790 Broadway, Room 409, New York 19, New York, or to Branch Treasurer.

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are killed in well under 30 seconds. The cumulative or synergistic action of detergent, chelating agent, and wetting agent has produced a compound lethal for various animal micro-organisms in a dilution that is relatively nontoxic and nonirritating.[4]

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Write for: reprint of Dr. Davis' article,[1] file card giving complete details of Davis technic, and pad of patient instruction sheets for home treatment. Address Julius Schmid, Inc., 423 West 55th Street, New York 19, N. Y.

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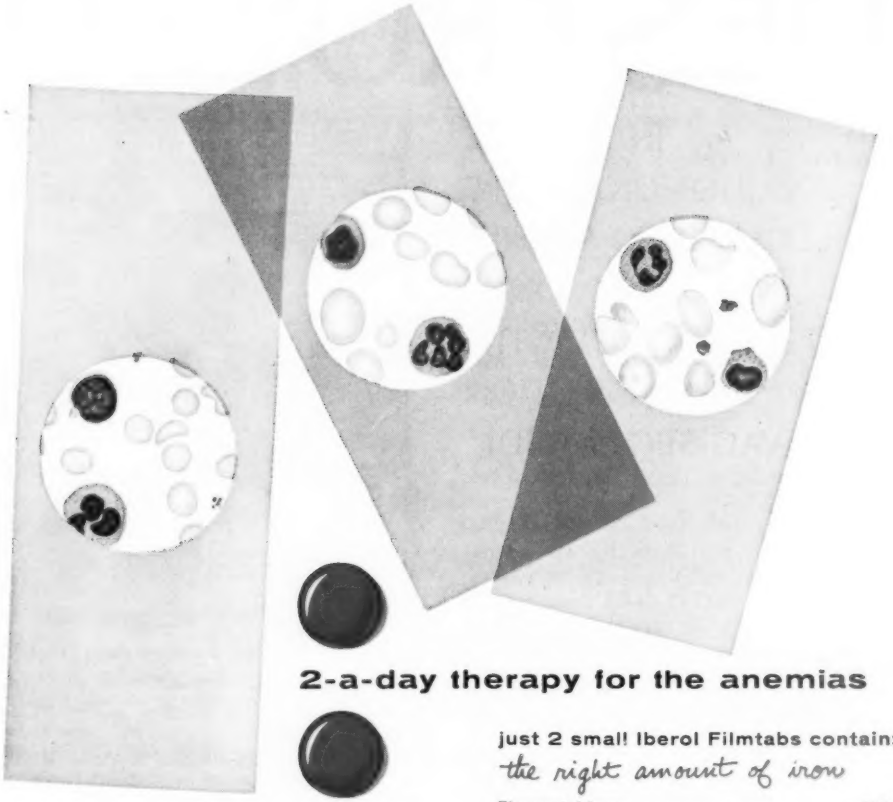

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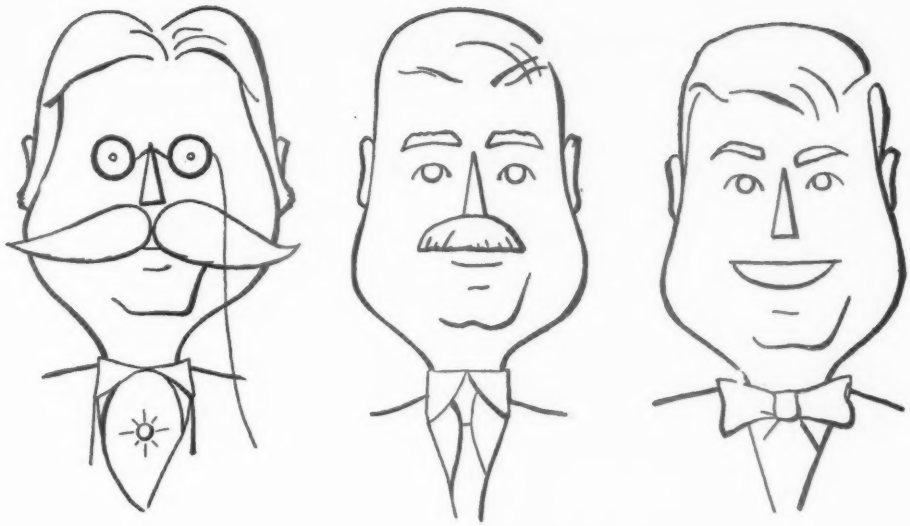

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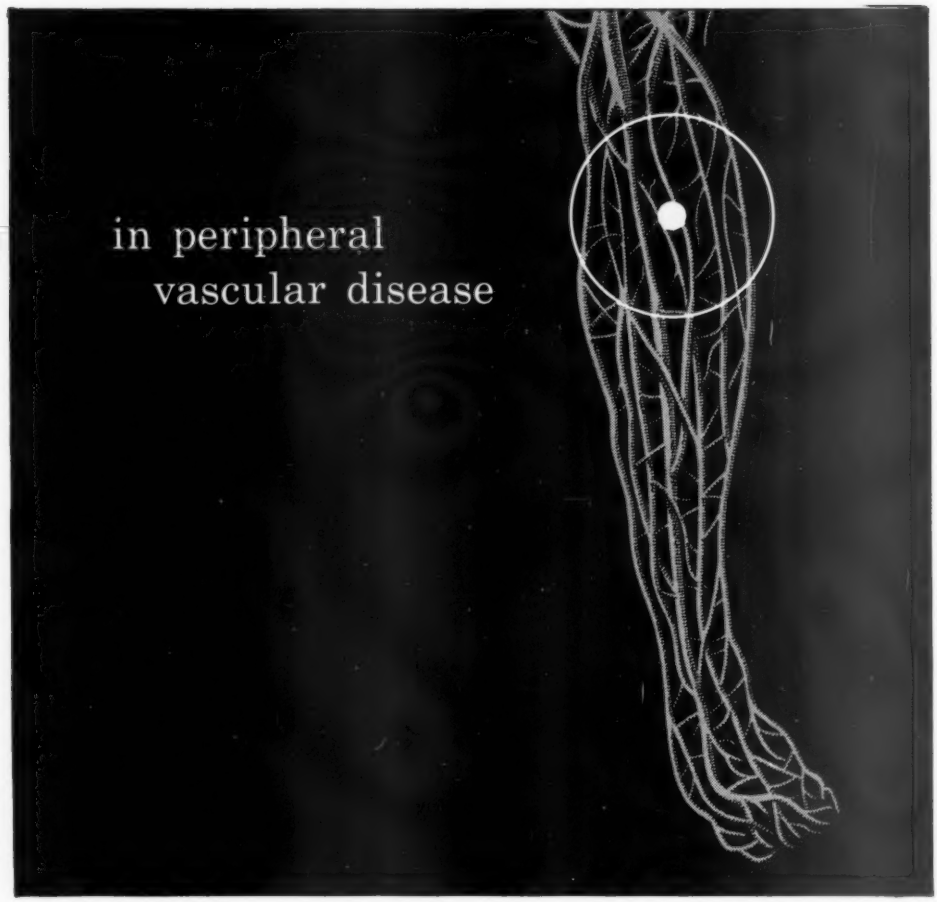

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Journal of the
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VOLUME 10 DECEMBER 1955 NUMBER 12

Surgical Management of Congenital Lesions of Small Intestines

REVIEW OF 142 LESIONS

Laurel A. Weibel, M.D.

DURING THE PAST two decades, increasing progress has come steadily in the field of pediatric surgery. Many infants are surviving pathologic conditions which only a few years ago were considered 100 percent fatal. In the field of small intestinal anomalies especially, this progress has been notable.[1,2]

This paper presents a summary of 142 congenital lesions found in 118 patients at the Los Angeles County Hospital between 1948 and 1954. Special attention is given to the diagnosis, preoperative management, and surgical procedures employed.

Except for those patients with Meckel's diverticulum, where only 22 percent of the total lesions were in individuals less than ten years of age, the majority of the patients became symptomatic and were operated on during the first week of life. Many of these babies had the added complications of prematurity as well as a high percentage of associated congenital anomalies (Table I). The high percentage of patients accurately diagnosed and taken to surgery early in the course of their disease is a credit to the close co-operation between the pediatric, radiologic, and surgical staffs at the hospital.

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TABLE I

ASSOCIATED CONGENITAL ANOMALIES	Meckel's Divertic.	Intestinal Atresia	Intestinal Stenosis	Congenital Bands	Intestinal Duplication	Pancreatic Abnormal.
Prematurity	3	16	7	9	3	4
Malrotation		3	3	13		2
with Volvulus		1	1	6		2
Cong. Heart Disease ...	2	5		4	1	1
Mongolism	2	3	1	2		1
Meckel's Diverticulum .		1		2		1
Esophageal Divertic. ..		1				
Intestinal Atresia	1			2	2	1
Intestinal Stenosis	1			2		1
Intestinal Duplication ..		2				
Accessory Spleen	3					
Annular Pancreas	1		2			
Heterotopic Pancreas ..	1					
Cystic Fibrosis Pancr...		1				
Mesenteric Cyst						1
Congenital Liver Cyst .	1					
Atelectasis			1			1
Thyroglossal Duct Cyst	1					
Supernumerary Thumb	1					1
Cleft Palate, Ear Defor.					1	
Atresia Bile Duct		1				
Congenital Band		1				
Hydrocephalus	1					
Aneurism Circle Willis .		1				

TABLE II

CONGENITAL LESIONS OF SMALL INTESTINE

Intestinal Diverticula		77
Meckel's	63	
Other Diverticula	14	
Intestinal Atresia		20
Intestinal Stenosis		10
Intestinal Duplication & Cysts		6
Congenital Bands		22
Associated with Malrotation	13	
Pancreatic Tissue Lesions		7
Heterotopic Pancreas	3	
Annular Pancreas	2	
Meconium Ileus	2	
Total		142

The specific lesions to be considered (Table II) include intestinal diverticula; atresia and stenosis; duplications and cysts; congenital bands, including those associated with malrotation and volvulus of the mid-gut; and those lesions of the small bowel associated with pancreatic abnormality.

Intestinal Diverticula

Historically, Meckel's diverticulum was first mentioned by Lavater in 1672. Ruysch published the first illustration in 1701, and Littre described its presence in a hernia in 1742. But it was Meckel,[3] in 1812, who first gave an accurate description including the diverticulum's embryologic significance and clinical importance.

Although the usual incidence is reported to vary from 2 to 4 percent of all cases coming to autopsy, it was only 0.3 percent in this series. There seems to be a marked paucity of cases in the Negro population, with a 4.7 percent incidence in this group of 63 cases; others have reported even lower incidence.[3] During the period studied, the Negro admissions averaged around 26 percent of the total admissions. There were 39 males and 24 females, giving a ratio of about 3 male to 2 female.

The largest number of cases occurred during the first ten years of life (Fig. 1), but the increasing number of autopsies after the fifth decade gives a late rise in the incidence curve. A majority of the symptomatic lesions occurred in infants and children, but there is no time when complications may not occur.

Of the total of 63 cases, 14 were symptomatic. The major complications requiring surgery were bleeding in two cases, obstruction in six cases, and diverticulitis in six cases (Table III). There was perforation with peritonitis in one of the latter cases. In two patients, no significant lesion could be found at surgery, but preoperative symptoms were attributed to its presence and did not recur postoperatively. Positive preoperative diagnosis was made only twice. Roentgen ray studies are seldom helpful in making this diagnosis,[3-6] but are helpful in ruling out other sources of bleeding or obstruction.

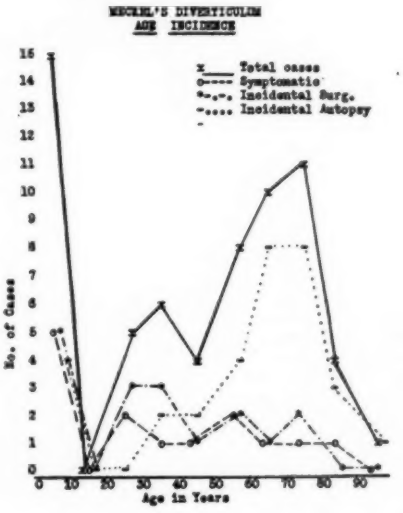

Fig. 1. Meckel's Diverticulum.

Fig. 2. Intestinal Diverticula.

Another 17 lesions were found incidentally at the time of surgery for some other cause. In 13 of these patients, a diverticulectomy was done (Table IV). There was one death in this last group.

The surgical procedure employed (Fig. 2) included: 1) initial ligation of the blood supply, which is usually quite prominent on either side of the diverticulum; 2) oblique application of clamps at the base and severance; 3) and 4) and a double layer of continuous chromic catgut reinforced with interrupted fine silk sutures. There were no postoperative complications where this procedure was followed.

The two deaths which occurred in the symptomatic group occurred in: 1. An 11 month old infant with a 10 hour history prior to entry. A preoperative diagnosis of intussusception was made, and although the intussusceptum had reached the rectal ampulla, it was easily reduced and the involved Meckel's diverticulum removed. The child died the next day with a temperature of 106 F., and autopsy revealed bronchopneumonia. 2. A 26 year old traumatic quadriplegic who developed massive gastrointestinal bleeding two weeks following cervical laminectomy. When transfusions failed to control the bleeding, he was explored and found to have a Meckel's diverticulum, containing gastric mucosa. He died shortly after operation when removed from his respirator to have a cut-down restarted. The one death in the incidental group resulted from complications arising from his primary disease.

TABLE III. MECKEL'S DIVERTICULA

Symptomatic		14
Bleeding	2	
Obstruction	6	
Intussusception	2	
Volvulus	2	
Band	1	
Aberrant Artery	1	
Diverticulitis	3	
Perforated	1	
No Def. Pathology	2	
Incidental Finding		49
Surgical	17	
Autopsy	32	
Total		63

TABLE IV. MECKEL'S DIVERTICULUM OPERATIVE PROCEDURE

	No. Cases	Average Morbidity	Mortality
Symptomatic			
Simple Diverticulectomy	8	9 days	1—12.5%
Resection Ileum with Diverticulum & end to end Anas.	4	11 days	
Redn. Volvulus and Diverticulectomy	1	13 days	
Redn. Intussusception and Diverticulectomy	1		1—100%
Incidental Diverticulectomy			
Simple Diverticulectomy	13		1— 7%
Resection of Ileum with Meckel's	1		
Total	28		3— 10%

The other intestinal diverticula in this group occurred largely in the duodenum with a smaller number in the jejunum and ileum. There were fourteen in this category, seven diagnosed radiologically, six by autopsy, and one discovered by roentgen ray and confirmed by surgery. In contrast to the Meckel's diverticulum, these diverticula extend into the mesentery of the small bowel. Waugh[7] states that duodenal diverticula rarely cause symptoms, and when surgery is done in those patients where the diverticulum appears to be the sole cause of symptoms, an excellent result is obtained in fewer than half of the cases.

One patient in this group was operated on because of recurrent pancreatitis and jaundice. At surgery, he was found to have a diverticulum occupying the region of the ampulla of Vater and extending toward the head of the pancreas. The lesion was removed and there was complete recovery with no recurrence in two years.

Four others presented histories of bleeding without other roentgen ray evidence to incriminate other possible sources. Three had symptoms suggesting ulcer, one of whom had a duodenal ulcer and two others had a hiatus hernia. One of the bleeding patients came to autopsy and no other lesion could be found to account for his bleeding.

Intestinal Atresia and Stenosis

The infant who begins to vomit soon after birth, especially if that vomitus is greenish in color and projectile in nature, should immediately be examined by roentgen ray to ascertain progress of gas in his intestinal tract.[8,9] A roentgenogram which shows a large gas-filled stomach and portion of the duodenum with no gas beyond is diagnostic of duodenal obstruction, and, when this obstruction is complete, it is probably caused by atresia (Fig. 3). The picture in stenosis is almost as typical (Fig. 4) with only a small amount of gas visible in the distal bowel.

Early diagnosis is essential in these infants because they lose weight rapidly, fall into severe electrolyte imbalance, and run a high risk of developing aspiration pneumonia. Early diagnosis, adequate operative and preoperative hydration and transfusion, and surgery are essential if any of these infants are to be salvaged.

In this series, 29 patients presented 30 lesions.

One patient had multiple areas of ileal stenosis as well as complete atresia in the jejunum. The fact that all but three of these patients received the benefit of surgery and the majority had a correct or nearly correct preoperative diagnosis is a credit to alert co-operation of the involved services in this hospital. The two nonsurgical deaths from atresia occurred in one premature infant who died three hours after birth. The other case was a premature infant who had advanced bronchopneumonia when first seen by the surgeon a few hours before he died at the age of three days. The infant dying of stenosis before surgery had other congenital anomalies, weighed 3 pounds, 8 ounces, and lived less than 24 hours (Fig. 5).

There were eight duodenal, ten jejunal, and one ileal atresia, and seven duodenal, one jejunal, and one ileal stenosis, with one patient presenting ileal and jejunal stenosis and atresia in numerous sites. Multiple lesions are not uncommon and should be searched for.

Although the surgical mortality in the group with atresia was over 60 percent (Table V), those patients with stenosis have a much more encouraging figure of 75 percent survival. Two of those patients with atresia survived surgery for 25 and 47 days respectively, only to die from spontaneous perforation of the rectosigmoid during a barium enema, and prolonged diarrhea of Salmonella typhi murium origin. These are included as operative deaths since they never left the hospital.

The usual surgical procedure was a simple by-pass with a side-to-side enteroanastomosis. When the atresia proved to be merely a complete diaphragm, the bowel was opened longitudinally, the diaphragm resected, and the incision closed transversely. In three instances, resection with end-to-end or end-to-side anastomosis was done with only one mortality. Three patients had two surgical procedures. Two of these died but the third is especially interesting since the second operation was done to correct an atresia of the common bile duct through a cholecystogastrostomy, and this baby has survived more than three years. The one patient with multiple areas of stenosis and atresia did not survive surgery.

Only 13 of this group of patients were born in this hospital, a newborn incidence of 2 in 10,000 live births. Twenty of these 29 infants weighed less than 5 pounds, 6 ounces at birth, and 24 weighed less than that amount at the time of surgery.

Fig. 3

Fig. 4

Fig. 3. Roentgenogram typical of atresia in the second portion of the duodenum. Fig. 4. Roentgenogram shows only small amount of gas passing beyond area of duodenal stenosis.

Fig. 5

Posterior autopsy, appearance of area of duodenal stenosis.

Congenital Bands

The 22 lesions considered in this classification include those obstructive lesions of the small intestine which are caused by the presence of congenital adhesions or bands. The majority of these patients were infants, only three were adults. Fifteen of the total cases were patients with duodenal bands, which are almost always found when there is some degree of malrotation and are frequently associated with volvulus of the mid-gut. It is not within the scope of this paper to discuss the complicated anatomy and embryology of malrotation, but the reader is referred to several excellent articles on the subject.[10,11]

All 22 of the patients in this group were treated surgically. There were four deaths, 13.6 percent, two caused by associated atresia, and two had strangulated small bowel with perforation in one. Only four of the infants were premature.

Those patients with simple bands were treated by lysis and ligation of the bands. The larger group with associated malrotation were treated by lysis of the duodenocolic bands and detorsion of the mid-gut volvulus when present. No attempt was made to fix the non or partially rotated colon. Many authors discussing this problem advise lysis of these duodenal bands even though there is no evidence of duodenal obstruction at the time of surgery.[9,11] It should also be noted that there may be associated duodenal stenosis, as was present in two of this group, and simple lysis of these adhesions may not solve the entire problem. Half of these patients had associated congenital anomalies (Table I).

Diagnosis is made from the history of vomiting and by typical roentgenographic findings (Fig. 6). Barium enema is helpful in confirming the presence of an associated rotational abnormality (Fig. 7).

TABLE V

	Total Cases	Total Mortality	Number Operated	Operative Mortality
ATRESIA	19	13— 68%	17— 89%	11— 65%
Duodenal ...	8	5— 63%	7— 88%	4— 57%
Jejunal	8	6— 75%	7— 88%	5— 71%
Ileal	2	1— 50%	2—100%	1— 50%
Multiple	1	1—100%	1—100%	1—100%
STENOSIS ...	9	3— 33%	8— 89%	2— 25%
Duodenal ...	7	3— 43%	6— 86%	2— 33%
Jejunal	1	0— 00%	1—100%	0— 00%
Ileal	0	0— 00%	0— 00%	0— 00%
Multiple	1	0— 00%	1—100%	0— 00%
STENOSIS and ATRESIA	1	1—100%	1—100%	1—100%
TOTAL	29	17— 59%	26— 90%	14— 48%

Pancreatic Lesions Involving Small Bowel

Seven patients, including two each with annular pancreas and meconium ileus associated with cystic fibrosis of the pancreas, and three with heterotopic pancreas, comprise this interesting and rare group. Annular pancreas is frequently associated with duodenal stenosis and is seldom accompanied by jaundice.[12] The treatment of choice is a by-pass procedure rather than an attempt to resect the encircling pancreas.

The two cases with meconium ileus both succumbed following unsuccessful surgical attempt to remove inspissated meconium from the obstructed terminal ileum. One patient had an associated atresia of the mid-jejunum. Perhaps better results may be obtained in the future by the use of hydrogen peroxide solution irrigation as has been suggested recently by Olem.[13] Pancreatin must be used postoperatively in most of those patients who survive this procedure.

Pancreatic heterotopia is especially interesting because it may remain asymptomatic for years and then present dramatic symptoms, as is illustrated by the one surgical case in this group. This 61 year old male was admitted with recent syncope and tarry stools and an "ulcer history." At laparotomy, he was found to have a 1.5 x 2.5 cm. island of pancreatic tissue two feet distal to the Ligament of Treitz (Figs. 8 and 9). The other two lesions were found at autopsy in infants with other congenital anomalies, one in the duodenum and the other in a Meckel's diverticulum.

Fig. 6

Fig. 7

Figs. 6 and 7. Patient with malrotation, cecum near midline, and duodenal bands.

Duplications and Cysts

This group of anomalies has been called by numerous names in the literature including: enterogenous cysts, inclusion cysts, enteric cysts, and ileum duplex, as well as the most acceptable connotation, "duplications of the intestinal tract."[9,14,15] There are several pathologic requirements if a lesion is to be considered a true duplication. These are: 1) the lesion must be contiguous with and strongly adherent to the intestine; 2) must have a smooth muscle coat; and 3) must be lined with mucosa.[9] Most of these lesions are attached to the mesenteric border of the bowel and, because the blood supply to the bowel would be compromised by attempted removal of the duplication, resection of both duplication and the attached bowel is advised. Clinically, these lesions may first present themselves as large abdominal masses, but the majority cause obstructive symptoms.

There were only three such lesions in this group. All were operated on, with one death. This death was in a patient with associated ileal atresia. In this patient, the duplication communicated with the lumen of the bowel, which is not the usual finding.[15]

There were two cysts in this group not fulfilling the requirements for true duplications. One was a thin walled cyst arising from the anti-mesenteric border of the ileum and adherent to the mesentery, causing obstruction. The other was in the mesentery and filled with serous fluid.

Conclusions

A group of 142 congenital lesions of the small intestine found at the Los Angeles County Hospital from 1948 through 1954 is presented. The importance of close co-operation of the pediatrician, the radiologist, and the surgeon in making an early diagnosis; giving adequate preoperative preparation; doing gentle, rapid, and as simple as possible surgery; and then planning a careful postoperative program of parenteral feeding, graduated oral feeding, and frequent supportive transfusions is stressed.

Many of these infants are premature and frequently have other congenital lesions which must not be overlooked. One of the major hazards in these small patients, because of the almost constant symptom of vomiting, is aspiration pneumonia, and it is essential that the nursing service be very watchful. It is the nurse who first notices any regurgitation or vomiting, and she must be alert to report such a finding to the doctor immediately.

Fig. 8

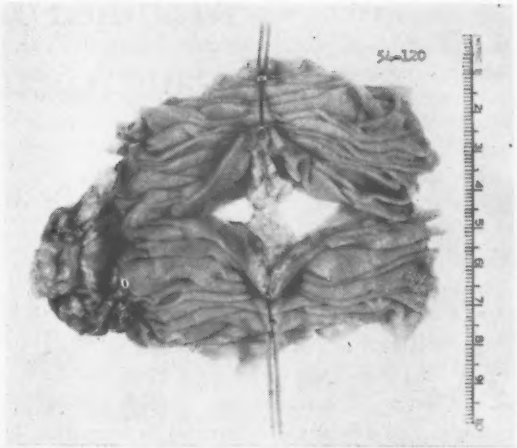

Fig. 9

Figs. 8 and 9. Pancreatic heterotopia in mid-jejunum in 61 year old man.

Great progress has been made in this field of surgery in the past ten years, but with application of the newer procedures for salvaging the premature infant and ever increasing alertness, and with increasing technical surgical skill, there can be still greater progress.

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Modified Techniques of Inhalant Anesthesia for Infants

Dorothy A. De Groat, M.D.

AS A PREFACE TO THIS DISCUSSION on modified techniques of inhalant anesthesia for infants, it is mandatory to indicate briefly anatomic and functional differences between the infant and the adult, since it was these differences that prompted such modifications of technique.

Anatomically, the infant larynx is more cephalad in position than the adult larynx and the airway is compromised by a relatively larger tongue which, when relaxed, depresses the epiglottis causing it to occlude the pharyngeal cavity.[1] The proximity of these structures, unless precautions are taken, may easily be the precursor to partial or complete respiratory obstruction. In addition, since the infant is a diaphragmatic breather, and since the viscera are relatively larger than in the adult, any visceral distention or any heavy "pack-offs" against the diaphragm will further compromise diaphragmatic excursion and respiratory exchange.[1,2,3,4]

Functionally, the infant is observed to have marked lability of all systems: cardiovascular, respiratory, central nervous system, temperature-regulating, renal, and adrenal.[1] It is well to remember that the respiratory rate of infants ranges between 28 and 44 per minute with an average tidal volume of 16 to 20 cc. in the newborn. Since approximately one third of the tidal volume represents dead space, it is apparent that any tendency toward rapid shallow respiration, partial obstruction, or increase in dead space will rapidly produce hypoxia and hypercarbia.[3] The BMR is high in infants with a maximum at 2 years of age; oxygen consumption being 7 cc. per Kg. per min. which is almost double the adult requirement.[4]

In addition to the above factors, which must be considered when contemplating anesthesia for a surgical procedure in an infant, clinical evaluation and preoperative medication further augment the ease of management. Premedication is prescribed to provide sedation and avoid psychic trauma, to provide a drying agent for respiratory secretions, to mitigate undesirable reflexes, and to depress the BMR to such a degree that a smaller quantity of anesthetic agent will be required.[4] Atropine, and more recently banthine®,[5] are utilized as drying agents. Barbiturates, demerol,® morphine sulfate, and avertin® are used for sedation and depression of reflex irritability; procaine amide also has been used to prevent reflex hyperactivity.[5] However, regardless of the agents used, it is imperative to premedicate the infant or child for his safety during the procedure.

With the above background, the following criteria emerge as being of paramount importance in any technique for inhalant anesthesia for infants: resistance must be reduced to a minimum, dead space must be proportionately less because the tidal volume is so small, adequate oxygenation must be maintained with assisted or controlled respiration if necessary, secretions must be removed as they accumulate, trauma must be avoided, heat retention must be minimized, and fluid replacement judiciously employed.[2,4,6]

Open and Semiopen

Vinethene® and ether technic is considered by most to have a wide margin of safety. The mask selected must be capable of minimizing dead space and it should be dumped often to remove excess CO_2 accumulation. In addition, it is wise to administer oxygen, either alone or in combination with ether by insufflation.[2,3,4]

Ethyl chloride and ether sequence was used in 2,500 cases by Deming[3] who reported that anticipated liver damage was never found. In 2,400 cases of ethyl chloride induction, cited by Digby Leigh,[4]

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there were two cases of sudden collapse, one of which was resuscitated and subsequently recovered. Ethyl chloride was found to be less irritating and less productive of secretions than vinethene®.[3]

Gravity

High flow nitrous oxide-oxygen at 20:5 liters per minute is directed toward the infant's face for short surgical procedures such as myringotomy, closed reduction of fractures, and incision and drainage.[4] Cyclopropane-oxygen is sometimes used in this manner if other advantages outweigh the explosive hazard.

Open Techniques—Insufflation

Insufflation implies the administration of anesthetic agents by blowing them into the oropharynx or trachea by way of an airway nipple, mouth hook, nasopharyngeal catheter, or endotracheal catheter. Flow rates should be high; 6 to 7 liters per minute in the infant and 16 to 20 liters per minute in the child are recommended. Such flow rates ventilate the dead space so that respiration is quiet and easy. In surgical procedures about the head and neck, the anesthetist can remove himself from the field of operation. Undesirable features of this procedure are the increase of explosive hazard and spillage of anesthetic agent into the room.[2,4]

Nonrebreathing Systems

The nonbreathing systems supply the gaseous anesthetic mixture to the infant at each inspiration and provide an expiratory outlet for unimpeded elimination of CO_2, nitrogen, and anesthetic mixture. The Ayre's and Slocum tubes have no valves; the Digby Leigh and Steven-Slater type valves offer a minimum of resistance.[4]

The Ayre's technic utilizes a Y-adapter with one arm conducting gas from the machine, a second arm connected to an endotracheal tube, and the third left free to function as an overflow and expiratory conduit. This third arm is available for suctioning, and respiration may be controlled by rhythmically occluding the orifice.[2,4] The Slocum tube is a modification of the Ayre tube, differing in that a window of the cylinder functions as the third arm of the Ayre tube.[2,4]

The Digby Leigh, Steven-Slater, and more recent mask modifications allow free ingress of gas from a reservoir bag and relatively free egress from another one-way valve which can be temporarily occluded for control of ventilation. The anesthetic mixture is not vitiated by air as it is with the Ayre or Slocum tubes.[2,4]

Semiclosed Partial Rebreathing System

This technic requires a mask, reservoir bag, gas source, and overflow valve. There is no CO_2 absorber in the circuit so flow rates must be high. For short procedures, 4 to 5 liters per minute are acceptable, but for long procedures, 14 to 15 liters per minute are considered more satisfactory.

Semiclosed

The use of this system presupposes the use of special equipment, and to this end, many modifications of anesthetic apparatus for infants have been introduced for use. All presume to decrease dead space and reduce friction. Adriani[6,7] has engineered an apparatus composed of a double lumen tube with relatively frictionless valves placed as close to the mask as possible. A uniflow flush bulb is interposed between the small reservoir bag and the small mask which is designed to wash out the mask and aid in the more uniform mixing of the gases.

Deming[3] specifies a small mask, a 500 to 1,000 cc. reservoir bag, 90 Gm. soda lime cannisters, and flow rates of 1.0 to 1.5 liters per minute. The latter author feels that the semiclosed system is advantageous in that the respiratory rate is decreased, there is a decrease in the incidence of tachycardia, secretions are diminished, and there is ready control of oxygen administration and ventilation.

The infant may be carried through the induction period on a semiclosed system by two different techniques as described by Deming.[3] These are especially applicable to the newborn and those infants up to 2 years of age; in the opinion of this group, children from 2 to 6 years of age may be carried through the induction period with any agent used for adult anesthesia.

The first technic utilized cyclopropane-oxygen in a 35:65 percent ratio of 1 to 4 liters flow per minute used intermittently with ether added as desired. This agent is characterized by a narrow margin of safety, and an increased explosive hazard;[3] but, in skilled hands, is productive of a quicker induction.

The second technic utilizes a reservoir bag filled with nitrous oxide-oxygen in a 75:25 percent ratio until the patient sleeps; then the mask is adjusted and the mixture is replaced by cyclopropane-oxygen as described before. Helium may be used as a diluent since, by virtue of its lesser density, the muscular effort required of the patient is considerably less.[3]

The above two techniques are recommended for infants who are not toxic and do not have high temperatures. If these conditions exist, the infant is put to sleep with rectal pentothal® or avertin® with no preliminary preparation of the bowel.

Closed System

A closed circle system with CO_2 absorber in the circuit is adequate, provided the apparatus is suitable and the ventilation is maintained at a safe level of exchange. In the event that an endotracheal tube is desired, its introduction must be postponed until the patient is in the second plane of the third stage, since an earlier attempt may precipitate a laryngospasm which is sometimes most difficult to break in an infant.[3] It is also of utmost importance to select an endotracheal tube of the largest possible diameter, keeping in mind that the narrowest point of the infant larynx may be beyond the cords at the level of the cricoid cartilage.[1,2,4] Any adapters or tubing used must be as large or larger than the internal diameter of the endotracheal tube, to minimize resistance.[4]

With the endotracheal tube in place, and the use of a small cannister of fresh soda lime or baralyme, the infant has been provided with a minimum of dead space, complete control of the airway, a modicum of resistance, and a relatively well adapted system to provide for him during the procedure. A circle or to-and-fro system may be adapted depending on the length of the procedure and the anticipation of heat retention with the to-and-fro system.[4]

In closing, it can be stated categorically that vigilant care must be exercised, since aberrations in the fundamental precepts of anesthesia have far more detrimental impact on the infant than they do on the older patient. The anesthesiologist is obligated to keep the airway patent and the patient well oxygenated; he is expected to keep the patient asleep and/or free of pain; he should be guided in the level of relaxation by the amount tolerated by the patient rather than the degree requested by the surgeon; and he should be influenced in his choice of agent and technique by his own relative proficiency in the satisfactory execution of the anesthetic management.

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CASE REPORTS

Hypoplastic Anemia Following Chronic Exposure to Kerosene

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HYPOPLASTIC OR REFRACTORY ANEMIA is characterized by anemia, leukopenia, and thrombocytopenia occurring separately or in combination. These cases fail to respond to any treatment but blood transfusions, and usually show no evidence of renal, hepatic, malignant, nutritional, or infectious disease; only rarely has increased blood destruction been detected. The condition may be primary or idiopathic, in which case a careful history fails to reveal exposure to an hemotoxic agent. The incidence of this type appears to be increasing.[1] Secondary or symptomatic hypoplastic anemias have been attributed to a wide variety of physical and chemical agents since Santesson's classic paper on benzol poisoning in 1897.[2,3] In recent years, benzol has been the cause less frequently, since its danger has become well recognized.[4] Other substances occasionally responsible for this condition include: radioactive materials; such heavy metals as organic arsenicals, gold compounds, bismuth, mercury, lead, and colloidal silver; aromatic hydrocarbons such as nitrobenzene, dinitrobenzene, trinitrotoluene, dinitrophenol, analine, paraphenylenediamine (hair dye), volatile cellulose solvents, and volatile insecticides;[5,6,7,8] anticonvulsants, such as trimethadione (tridione®) and methylphenyl - ethyl - hydantoin (mesantoin®); the antihistaminics, phenothiazine-type (phenergan®) and ethylenediamine-type (pyribenzamine®); the antimicrobials, chloramphenicol, sulfonamides, thiosemicarbazones, streptomycin, and isoniazid; anti-thyroid agents, the thiouracils and methimazole; the sedatives, allylisopropylacetylurea (sedormid®), aminopyrine (pyramidon®), phenacemide (phenurone), and pyrithyldione (presidon®); spasmolytics, phenothiazines (diparcol®) and procaine amide; and an unclassified group, phenylbutazone, mercurial diuretics, quinidine, quinacrine (atabrine®),[9] and hydralazine (apresoline®).[1,10,11]

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The role of benzol in the causation of hypoplastic anemias has been well established. However, the effect of the petroleum distillates on the blood is still a controversial matter.[2] No report has been found of a case of hypoplastic anemia following exposure to kerosene. However, Straus[12] reported three cases of aplastic anemia occurring after chronic exposure to carbon tetrachloride, and one of his patients had as his chief occupation the cleaning of gun parts with kerosene and carbon tetrachloride.

The following case of hypoplastic anemia developed after chronic exposure to kerosene.

CASE REPORT

The patient was a 58 year old white male who was admitted to Harbor General Hospital April 18, 1955, and expired June 4, 1955. In the previous nine to ten months there had been increasing fatigability and frequent "colds." In February 1955, fever, chills, cough, and left pleuritic chest pain began. He was admitted to another hospital where a severe anemia was found. Ten blood transfusions were given, as well as penicillin and tetracycline. He returned to work in spite of pleuritic pain, intermittent fever, and progressive weakness and lassitude. On April 1, 1955, hemoptysis and fever became persistent. Five days later, hospitalization again became necessary. Ten units of whole blood were given before the patient was transferred to Harbor General Hospital. The patient had taken no medication other than that prescribed by his doctor during his recent illness except for occasional aspirin and cold tablets (composed of aspirin, magnesium hydroxide, and yellow phenolphthalein).

From 1928 to 1930, the patient had worked in a factory, plating lead batteries. He was transferred from this job because "lead poisoning showed up in the blood." For three years prior to hospitalization, he had worked in a machine shop. Although his main job involved delivering airplane parts, he spent three or four days each week washing the parts in a large tank filled with a degreasing solvent, composed of 29 parts kerosene and one part cosmoline. The larger parts were

placed on a platform and rinsed by pouring the solvent over them. It was usually necessary to immerse the hands in the solvent during the rinsing process.

Physical examination revealed a well developed, well nourished, middle-aged, white male who did not appear acutely ill. The temperature was 101.5 F., pulse 80 per minute, respirations 22 per minute, and blood pressure 120 mm. Hg. systolic and 60 mm. Hg. diastolic. There were ecchymotic areas over the medial aspect of the right arm and petechiae over the dorsum of both feet and on the soft palate. There was no peripheral lymphadenopathy. The ocular fundi showed no infiltrates. There were no ulcerations in the oral cavity, but a mild gingivitis was present. There was an intermittent pleural friction rub over the anterolateral aspect of the left lung, and occasional crackling rales could be heard in this area. The heart was not enlarged and no murmurs were heard. The liver edge was felt one fingerbreadth below the right costal margin in the mid-clavicular line, and its upper border was percussed over the seventh intercostal space. The spleen was not enlarged and no abdominal masses were palpable.

Initial laboratory investigation indicated the following: hemoglobin 15.0 Gm. per 100 cc; hematocrit 49 volumes percent; erythrocytes 5,350,000 per cubic mm.; leukocytes 500 per cubic mm. with 15 percent neutrophiles and 85 percent lymphocytes; platelets 11,000 per cubic mm.; reticulocytes 0.5 percent; Rumpel-Leede test strongly positive; no clot retraction in 24 hours; prothrombin time 65 percent; prothrombin consumption 77 percent in four hours; coagulation time 10 minutes (Lee-White, 37 C., 3 tubes). The urinalysis was normal, and serologic tests for syphilis were negative. Stool examination showed a trace of occult blood as tested by the guaiac method. Tuberculin, coccidioidin, and histoplasmin skin tests were negative. Chest roentgenogram on admission revealed a resolving pneumonia in the left midlung field, and a less extensive infiltration in the right peripheral lung field.

Bone marrow aspiration from several sites revealed moderate cellularity. Fatty spaces were readily seen. The predominant cell was a blast of the leukocytic series with very little differentiation, although occasional promyelocytes and myelocytes were present. There were a few early cells of the lymphocytic series, as well as rare megakaryocytes. A surgical bone marrow biopsy from the sternum revealed an increase in the number of fatty spaces in ratio to the hematopoietic elements with only minute foci of erythroid elements and rare megakaryocytes. The majority of the cells were uniformly immature, and resembled stem cells on the imprint preparations of the marrow fragments. Interpretation: hypoplastic marrow with maturation arrest.*

Course. The patient was treated with tetracycline and 12 million units of penicillin daily, after numerous blood and sputum specimens had been obtained for bacteriologic study. He was given 300 mg. of hydrocortisone daily. The fever disappeared and the pulmonary infiltrations cleared remarkably well; but a small fusiform density remained in the left second anterior interspace. All bronchi appeared normal bronchoscopically. Because of the equivocal nature of the persistent infiltrate in the left lung field, streptomycin, one Gm. twice weekly, and isoniazid, 100 mg. three times daily, were started. The leukocyte count rose to a maximum of 2,200 per cubic mm. with 44 percent neutrophiles. Platelets rose to a high of 86,000 per cubic mm. The clot retraction became complete within ninety minutes, and the Rumpel-Leede phenomenon negative. Nevertheless, the hemoglobin gradually fell from the admission level of 15.0 Gm. per 100 cc. to 10.1 Gm.; the hematocrit from 49 vol. percent to 32 vol. percent. Four blood transfusions were given.

*Bone marrow interpretation by Dr. B. G. Fishkin.

On May 12, 1955, it was first noted that there was a change in the pattern of the peripheral blood smear in that one percent blast forms became evident. The proportion of blast forms gradually increased to 22 percent. Generalized muscle and joint soreness developed on May 31, 1955, and the patient's temperature rose suddenly to 102.0 F. orally. Petechiae reappeared over the anterior aspect of the chest, abdomen, and extremities. The abdomen became distended and tympanitic, and bowel sounds were absent; a fluid wave was present. Blood and sputum cultures grew *Micrococcus pyogenes*, var. *aureus*, coagulase positive. Hydrocortisone dosage, which had been gradually decreased to 180 mg. per day, was increased to 300 mg. per day, and intravenous erythromycin and chloramphenicol were given. Nuchal rigidity developed and the patient became irrational. During the last three days of life, the leukocyte count fell to 150 per cubic mm., the platelets again disappeared from the peripheral blood smear, and the clot failed to retract. In spite of six transfusions of fresh blood collected in siliconized glassware, active rectal bleeding developed, and the patient expired six hours later at 3:15 a.m., June 4, 1955.

Postmortem examination (performed eight hours after death).** The skin mucous membranes, and all serosal surfaces were studded with petechial hemorrhages. The peritoneal cavity contained one liter of straw-colored fluid. There were dense adhesions between the left upper lobe of the lung and the chest wall, with a peripheral ragged cavity measuring 2.5 cm. in diameter in this same area. There was no surrounding fibrosis or evidence of caseation necrosis or tumor. The tracheobronchial tree was filled with dirty brown, mucoid material, and the lungs contained reddish brown edema fluid. The heart was normal except for numerous petechial hemorrhages on the visceral and parietal pericardium. The spleen weighed 220 Gm. Its parenchyma was rather pale, with indistinct malpighian corpuscles. The bone marrow, sampled from several vertebral bodies and the sternum, was pale and somewhat friable. The small and large bowel were covered with petechiae and there was marked intramural hemorrhage. The liver weighed 2,300 Gm.; there was a slight increase in the lobular pattern. There were no enlarged lymph nodes. The brain weighed 1,500 Gm. The leptomeninges were somewhat thickened and the sulci narrowed. There was a small hemorrhage about the choroid plexus in the left occipital horn. The remaining organs were unremarkable.

Microscopic description. Lungs: Large zones of fairly fresh hemorrhage into alveoli; one section showed a zone of necrosis with hemorrhage and large colonies of bacteria with little acute inflammatory response. Heart: Extensive epicardial hemorrhage. Bone marrow: The marrow was very hypoplastic. No megakaryocytes were seen, and there was a severe reduction in the erythroid series. Major elements were medium-sized cells with round nuclei and scanty cytoplasm, probably myeloid forms. These were associated with many similar cells which were pyknotic and showed necrobiotic changes. There were many reticulum cells and a great deal of phagocytosis of fatty and brown pigmented material. Spleen: The follicles were medium to small in size. Occasional polymorphonuclear cells were scattered in the follicles and within the sinusoids. Small bowel: Vascular engorgement and fresh hemorrhage subserosally and in the muscular coat. Liver: Moderate, diffuse fatty changes; focal portal infiltrates occasionally with polymorphonuclear cells. Kidney: Scattered focal infiltrates of small round cells resembling plasma cells and pyknotic polymorphonuclear cells; fresh hemorrhage in the peri-pelvic fat. There was no leukemic cellular infiltration in any organ.

** Autopsy performed by Dr. Robert Cook.

Discussion

The solvents used on a large scale in industry today belong to one of two groups: 1) the aromatic, coal tar, benzol series produced by the dry distillation of coal, comprising benzene, toluene, xylene, naphthalene, phenol, cresol, and anthracene; and 2) the aliphatic, fatty, petroleum series produced from the distillation of crude oil including gasoline, naphtha, petroleum ether, kerosene, and the chlorinated hydrocarbons.[13,14,15]

Modern methods of petroleum production have changed the character of the distillates. "Cracking" of petroleum brings about the formation of aromatic hydrocarbons of which benzene is the principal compound.[14] Petroleum solvents produced by the ordinary "straight run" distillation process contain from 5 to 17 percent of aromatic hydrocarbons. "Cracking" may increase their content to from 25 to 40 percent.[2,5,16] Kerosene contains eleven hydrocarbons. These include one paraffin, three alkyl derivatives of benzene, naphthalene, two alkyl derivatives of naphthalene, and four additional substances which contain a benzene ring fused to a cycloparaffin ring.[14,17] Rumanian kerosene may contain 16 percent aromatic hydrocarbons.[18] Thus, a manufacturer or individual may believe he is using a solvent free of benzol when actually there may be a dangerous amount present.

In the coal tar group, benzene is by far the most important myelotoxic agent, while the effects of xylene, toluene, and naphthalene on the bone marrow are not well established.[2]

Chronic benzene poisoning may produce extremely variable manifestations, from classical aplastic anemia to typical leukemic pictures.[3,19] It may bring about polycythemia or anemia; leukocytosis or leukopenia; leukemia or leukemoid blood pictures (either lymphatic or myeloid); eosinophilia; macrocytosis or microcytosis.[16,20] The bone marrow varies from severe hypoplasia to the most extreme hyperplasia with extramedullary hematopoiesis.[3] A striking feature is the occasional occurrence of latency; the first clinical symptoms may appear long after the exposure to benzene has ceased. Cases have been recorded in which manifestations did not appear until six to ten years after the last exposure.[2] The enormous differences in individual susceptibility have been emphasized by many investigators.[19,20,21,22] Hunter,[21] from his study of 89 individuals exposed to benzene, concludes that it is doubtful whether any concentration greater than zero is safe over a long period of time. Osgood[10] has pointed out a difference between drug-induced hypoplastic syndromes and similar syndromes of other origin. In the former, the disease develops in only a small proportion of the population exposed to the risk, and the severity of the hypoplasia shows little relationship to the dose administered. In other words, there is an idiosyncrasy to the particular toxin. Benzene poisoning presents a similar picture of variation in susceptibility. Cases are recorded where minute daily doses have been fatal; there are other instances in which people have been exposed for years to dangerous concentrations with no obvious ill effects.[7,20,22]

The effect on the bone marrow of the solvents in the petroleum-distillate group is a matter of controversy; they are not, however, ordinarily considered to be myelotoxic.

Acute kerosene poisoning occurs frequently from accidental ingestion by infants and children. Pneumonia is a common complication and occasionally is fatal. No effect on the hematopoietic system has been recorded other than the presence of leukocytosis.[23,24,25,26,27]

Chronic exposure to kerosene alone has received little attention in industrial toxicology. Aplastic anemia and/or leukopenia have been produced experimentally in animals from petroleum distillates.[28] Cases of aplastic anemia have been reported from chronic exposure in the petroleum industry.[2] Askey [5] described a case of aplastic anemia following the prolonged use of gasoline as a cleaning solvent. However, prolonged exposure to pure gasoline, free from compounds other than the hydrocarbons of the paraffin series, has shown no effect on the blood.[29] This suggests that the presence of the coal tar derivatives in petroleum distillates may be responsible for the hematologic manifestations. Kerosene can contain an appreciable amount of these aromatic hydrocarbons including benzene.

The case described in this paper exhibited the usual features of hypoplastic anemia with pancytopenia and a hypoplastic marrow. The possibility of an aleukemic leukemia was entertained because of the predominance of blast forms in the bone marrow. However, the hypoplastic nature of the marrow taken from several sites more strongly suggested a generalized bone marrow depression, and the autopsy confirmed the diagnosis of severe hypoplastic anemia with no evidence of leukemia.

A careful search for exposure to myelotoxic substances revealed only the moderate exposure to a degreasing and cleaning agent composed of 29 parts of kerosene and one part of cosmolene. Cosmolene, or paraffin jelly, is a purified mixture of semi-solid hydrocarbons chiefly of the methane series, used for lubricating firearms and as a rust preventative.[17] It was added to the kerosene to decrease skin irritation. The presence of benzene derivatives in kerosene has been mentioned. Analysis of this cleaning agent

showed the presence of 0.1 percent aromatic hydrocarbons expressed as naphthalene.

Hypoplastic anemia is frequently idiopathic, and it is possible that this case represents an example of such a process. It should be emphasized that, although vast quantities of kerosene have been used for many years with widespread population exposure, myelotoxic effects have not been attributed to this agent. Nevertheless, the presence of even small concentrations of benzene in kerosene should not be disregarded, and it is possible that this patient displayed an idiosyncrasy to what is thought to be a relatively innocuous solvent.

Summary

A case of hypoplastic anemia which followed chronic exposure to kerosene has been presented. Although kerosene has been used extensively for many years and is considered to be a relatively safe substance, the presence of aromatic hydrocarbons of the benzol series in this petroleum distillate might indicate that it is potentially myelotoxic in susceptible individuals.

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Hemoperitoneum from Ruptured Corpus Luteum Cyst

ASSOCIATED WITH UNRUPTURED TUBAL PREGNANCY

Mary F. Callaghan, M.D.

IT IS NOT AT ALL UNUSUAL for a graafian follicle to bleed at the time of ovulation, producing a symptom complex commonly called mittelschmerz. Less frequently, rupture may occur later in the menstrual cycle when the follicle has become a corpus luteum.[1,2,3] Symptoms are apt to be more severe when this happens because bleeding is more active and various degrees of hemoperitoneum may result. Such cases are of interest because of the problem of differential diagnosis. Taniguchi[3] reported on 19 cases, in only one of which the correct diagnosis was made preoperatively. The diagnoses most frequently made were acute appendicitis and ruptured ectopic pregnancy.

Rupture of the corpus luteum during pregnancy is an even rarer occurrence. Two of the 19 patients reported upon by Taniguchi were pregnant, and reports of such cases appear in the literature from time to time.[4,5] Evidently, then, pregnancy is not a causative factor in rupture of the corpus luteum. Cyst formation and hemorrhage into the corpus luteum may be important, but the exact cause of rupture is unknown.

The occurrence of ruptured corpus luteum and unruptured tubal pregnancy in the same patient must be extremely rare. We were able to find one such case in the literature.[5] The following case may then be of interest.

Case Report

Mrs. C. M., age 34, was first seen Nov. 19, 1952. Her chief complaint was of sudden, severe, lower abdominal pain and prostration. Her menstrual period was several days late and she had had scanty vaginal bleeding for two days. Her only child had been delivered at term and without complications nine years before. Her past history was otherwise negative.

She was obviously acutely ill and in shock. Her skin was cold and clammy, pulse 120, blood pressure 64/40, and abdomen slightly distended and acutely tender. Pelvic examination revealed only exquisite tenderness in the cul-de-sac.

At laparotomy, a massive hemoperitoneum was found (estimate—more than 1,500 cc. blood). There was an unruptured pregnancy in the mid-portion of the right tube measuring 3 to 4 cm. in diameter. There was no laceration of the tube nor was there any clot at the fimbriated end to indicate tubal abortion. The right ovary and left tube were normal. The left ovary, however, was enlarged by a 2.5 cm. corpus luteum cyst. There was a small rupture through the thin wall of this cyst which was bleeding briskly. The right tube and left ovary were removed and careful microscopic examination confirmed the impression that the corpus luteum cyst rather than the tubal pregnancy was the source of the intra-abdominal hemorrhage.

The patient made an uneventful recovery and was discharged from the hospital on the seventh postoperative day.

Dr. Callaghan is a Diplomate of the American Board of Obstetrics and Gynecology.

Comment

The case of Mrs. C. M. is believed to be of unusual interest because of the coincidental occurrence of hemoperitoneum and tubal pregnancy. The hemoperitoneum was not produced, as is the usual case, by rupture of the gravid tube, but rather by rupture of the associated corpus luteum cyst.

Summary

1. Rupture of the corpus luteum may occur and the resulting intra-abdominal hemorrhage may pose a problem in differential diagnosis.

2. Unlike mittelschmerz, corpus luteum rupture takes place late in the menstrual cycle and is more apt to cause serious hemorrhage.

3. Hemorrhage from ruptured corpus luteum may rarely occur as a complication of pregnancy.

4. A case of hemorrhaging corpus luteum coexisting with an unruptured tubal pregnancy is reported here.

5. An almost identical case has recently been reported in the French literature.[5]

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Cystic Hygroma of Neck

Sybil D. Haire, M.D.

B.K., AGED TEN MONTHS, was admitted to the hospital on June 16, 1955, for removal of a mass in the right side of the neck. The mass had been present since birth, but had not grown very much. It was more marked with crying and varied in size with respiration, being larger upon expiration. During very quiet respiration, it would almost disappear.

Case Report

Past History. Infant had had a delivery birth weight of 8 pounds, 7 ounces. Roentgenogram of the neck at this time showed a soft tissue mass extending laterally on the right, measuring approximately 2 cm. in diameter. There was no evidence of air. Impression: hygroma, although laryngocele could not be excluded.

Follow-up from discharge until time of present admission revealed the usual upper-respiratory infections including one episode of asthmatic bronchitis. A repeat fluoroscopy at three months of age revealed no air present in the mass. Lipiodol instillation studies were done at five months of age. The bronchial tree was partially visualized, but no direct connection could be established between the mass and the trachea or larynx; nor was there any herniation of the apex of the right lung through Sibson's fascia. Repeat roentgenograms prior to admission to the hospital again revealed no air in the large soft tissue bulge. However, the radiologists felt the evidence was in favor of the lesion being a laryngocele.

Physical Examination. Examination showed a well developed 10 month old infant. In the neck there was a soft tissue mass apparently filled with air which ballooned with expiration and collapsed with inspiration. During crying or coughing, it became very pronounced. The mass was located posterior to the middle third of the sternocleidomastoid muscle. The skin over it was thin. There were no bruits or pulsations present.

Surgical Findings. A cyst containing fluid was present in the posterior triangle of the neck approximately 2 cm. in diameter and 7 cm. long. This cyst was connected to a more dilated mediastinal portion by a constricted area. Two prolongations of this cyst extended medially, one being attached to the carotid sheath, and the other burrowing into the tracheo-esophageal groove. The neck portion of the cyst was removed and the remainder ligated at the area of narrowing, which was approximately 1 cm. in diameter. The remaining portion was removed about three weeks later, when a multiloculated cystic hygroma measuring 8 to 10 cm. in diameter was found at the lateral portion of the superior mediastinum. It burrowed between and completely surrounded the carotid and the subclavian arteries. The hygroma invested the vagus and the recurrent laryngeal nerves completely, and was tightly adherent to all the superior mediastinal structures, including the thymus, vagus, and the trachea. Both portions of the cyst contained a clear, straw-colored, rather thick mucoid substance.

Microscopic Examination. A lymphangiectatic structure, the wall of which was composed of fibrous tissue without lining cells and lymphocytic infiltrations, was revealed.

Differential Diagnosis. This child had a mass in the neck located posterior to the middle third of the sternocleidomastoid muscle, varying in size according to the phase of respiration and the force of the respirations. From this it could be inferred that the mass was in some way connected with the respiratory system below the vocal cords. The possibilities were herniation of the apex of the lung through Sibson's fascia, a pneumatocele, a laryngocele, or a tracheocele. However, repeated roentgenograms, fluoroscopy, and lipiodol instillation all failed to reveal any air in the mass or any connection between the mass and the respiratory tract.

Other lesions to be considered would be a lipoma, branchial cleft cyst, neurogenic tumor, esophageal pouch or cystic hygroma. Lipomas do not fluctuate regardless of position; a lipoma, by pressure on neighboring structures, probably would have given more symptoms. Branchial cysts are anterior to the sternocleidomastoid muscle; by episodes of draining into the neck or pharynx, they may become reduced in size for a time. A neurogenic tumor in this location for ten months' duration would probably have shown growth and also neurologic signs, neither of which was found. An esophageal pouch would be ruled out because there were no episodes of vomiting with resultant emptying of the pouch.

Discussion

It has been thought that cystic hygromas are related to lymphangiomas which have in turn become dilated and multiloculated. However, the present trend is to list them as separate entities. Lymphangiomas are found scattered throughout the body, but cystic hygromas are found mainly in the neck and occasionally in the iliac region. Some feel that these lymphatic sacs arise from the jugular veins and the pelvic veins, others that they arise from

Dr. Haire is a member of the Pediatrics Society of Long Beach and a Staff Member of Seaside, St. Marys, and Community Hospitals, Long Beach.

separate mesenchymal tissue. In either case, there is probably a sequestration of tissue which in turn develops into the endothelium-lined hygroma.

The hygroma cyst is a smooth, communicating, multiloculated sac which is thin-walled, transparent, and soft in consistency. The fluid of the cyst is thin, clear, and usually colorless, though it may show a very slight yellowish tinge. The wall of the cyst is composed of connective tissue and the cystic spaces are lined with endothelial tissue.

Most hygromas appear in the neck, especially in the posterior triangle behind the sternocleidomastoid muscle. They may extend into the axilla, superior mediastinum, and clavicular region. Occasionally, they may be found in the anterior cervical triangle with a tendency to grow up into the floor of the mouth. The size varies, but not according to age or duration of the lesion. The overlying skin is generally normal in texture or may be somewhat thinned, but because of the nature of the cystic fluid, the cyst itself can be transilluminated. The mass may be present at birth and in most cases is present by two years of age.

In this particular case, the growth of the cyst began in the neck and then progressed by a thin connection with a larger growth in the superior mediastinum. Because of the presence of the latter portion, the contents of the neck portion would drain into the superior mediastinum on deep inspiration with negative pressure within the thoracic cavity. In contrast, with expiration, when a lower negative pressure was made in the thoracic cavity, the fluid flowed into the neck portion. With marked expiration, as in crying or coughing, this pressure tended toward being positive, with resultant marked distention of the neck portion of the cyst. Positive diagnosis could have been made prior to operation, but there was always the danger that, with aspiration, air may have been found in spite of the roentgen ray findings.

Conclusion

A case of cystic hygroma of the neck was presented. Owing to its extension into the superior mediastinum with resultant variation on respiration, the diagnosis was not definitely made until the time of operation.

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Exceptional Children's Foundation School

Geraldine L. Dickinson, M.D.

Harbor Area Exceptional Children's Foundation School of San Pedro, California, is one of the schools which was organized through the influence of the Exceptional Children's Foundation approximately two years ago. At that time, a group of parents met together and made plans to start a school which would assist in the education of those children whose abilities are below the level generally accepted in the regular schools.

In order to obtain pupils, these parents advertised in the local newspaper and sent cards to all the local physicians, requesting that those patients qualifying be notified of the new school. By September 1953, the school was ready to open and started with six pupils.

The number has increased sufficiently so that now there are three classes, grouped according to age. The primary section applies to ages 5 through 7. In this class, socialization is the main object. These children appear to have very definite fears and an effort is made to overcome them and to help them accept discipline. These two steps in socializing appear to be gained by creating a relaxed situation and developing a definite routine. The intermediate group includes ages 8 through 12. Here academic learning is begun and encouraged with repetition added to the regular routine already established in the relaxed situation. The advanced group takes those children over 13 years of age. In this class, academic attainments are still encouraged and in addition crafts are added to the program. The girls learn to cook with the various ready mixes and the boys learn janitorial duties. There is also a definite effort to teach leadership by having each older student assigned to care for a younger child on field trips which occur once a month.

Dr. Dickinson is an Instructor in Pediatrics, College of Medical Evangelists, Los Angeles; and School Physician for the Harbor Area.

In the teaching of these students, "The three R's" —Relaxation, Repetition, and Routine—are kept constantly in mind. The classes must be short enough to handle the limited interest span of the children, and to curtail frustration as much as possible. Thus, it is easy to see, the staff of such a school must count it a privilege to work with these children in a cheerful atmosphere plus the other usual teaching requirements. As the principal stated, "She must be a person who enjoys the fullness of living."

The teachers use every avenue possible, including both medical and psychologic aids. Also, parent-teacher group meetings are definitely encouraged. During these conferences, parents meet other parents having similar problems and begin to accept their own child.

Recognition of the child is believed to be the most common problem in this school. Many of the children have been so rejected and cloistered they have never even been down to the corner grocery store until coming to school. Another frequent problem occurs when the parent, realizing there is a limitation, over-waits on the child and thus prevents his developing the ability he actually has. Toilet training has not been a problem since early in the first year of the school's experience.

However, once a parent has accepted the child because of himself, the child becomes more relaxed, loses much of his frustration, and finds it easier to associate with others.

One feature which a visitor notices in the school is the eagerness the children have toward coming to school and the protection of its property. Having come early to the school, the writer waited in the patio as the students arrived and each gave a morning's greeting with the exception of one boy, a new child. He hid behind a clump of Poinsettia bushes until he finally decided to bypass the writer by cutting across the new lawn. Then another child spotted him, and said, "I'll tell teacher on you for walking across the lawn." The writer knew then that she really was at school.

History and Scope of Industrial Medicine

Catherine Mangan Maguire, M.D.

INDUSTRIAL MEDICINE is neither new nor modern but had its inception in antiquity. Hippocrates described lead colic and Galen cited diseases peculiar to specific trades such as miners, tanners, and chemists. However, the father of industrial medicine was Bernardino Ramazzini who was born in Capri in 1633. He studied thoroughly the working environment of many trades, such as well diggers, stone workers, and bakers, and described the associated diseases in a now famous book. He attempted to improve these working conditions and gave us a basis for our modern industrial hygiene and sanitation. Early in this century, Dr. Alice Hamilton was associated with Jane Addams of Hull House fame, and became interested in the underprivileged. From this base, she became interested in occupational medicine and contributed many articles and books on this subject.

Industrial medicine should not be confused with compensation medicine because these are not synonymous terms. Compensation medicine is only a small part of industrial medicine, having to do with occupational injuries or illness. Industrial medicine involves the well-being of an employee, his physical, mental, and emotional health, occupational and non-occupational. It also involves preventive medicine and industrial hygiene.

The function of an industrial medical department is primarily to protect the health of the employees. This is carried out in several ways.

1. By knowing the jobs, the hazards and the duties involved in performing each job.

2. By evaluating the candidate for employment with the job in mind to which he or she is to be assigned.

3. By proper placement of such prospective employee in a suitable job.

4. By a follow-up of any apparent physical defect or disease.

In actuality, an applicant is first interviewed by the personnel department and then referred to his prospective supervisor. If he seems suitable for the job, he is then sent to the medical department for examination. This includes a complete physical examination with auditory and visual tests, blood count, urinalysis, serology, and chest roentgenogram. Annual examinations are given to the employees and in certain jobs examinations are done more frequently.

All plant emergencies are first treated by the industrial medical department. The patient may then either be followed by the plant physician or referred to his family physician or a specialist. Frequently a consultation with one or more specialists seems advisable in order to insure the best medical care for the employee.

In regard to non-occupational illnesses or injuries, the plant physician serves as an adviser if requested by the employee. The industrial physician is frequently consulted by the employees about prospective surgery for himself or even for a member of his family. Serving in this manner improves the relationship of the employee with the plant medical department. All correctable defects of a non-occupational origin, discovered in either the pre-placement examination or the annual physical examination, are referred to the employee's family physician for treatment.

Plant tours to inspect jobs, or as a member of the safety committee, are important aspects of the duties of the industrial physician. One cannot pass an employee for a job if the nature of the job is not understood in detail by the physician. The potential hazards of the plant must also be known to the industrial physician and he must work

Dr. Maguire is Manager of Medical Services, Olin Mathieson Chemical Corporation, New York, New York. *This article was one of the papers presented in a symposium at the Annual Meeting of the American Medical Women's Association, June 4, 1955.*

closely with the industrial hygienist, industrial engineer, and the safety director.

The relationship of the industrial physician to the local physicians is one of co-operation and teamwork in the care of employees. Available information should be channeled both ways as indicated in the therapy of the patient.

The original contact of a prospective employee with the medical department is of importance because first impressions can be lasting. The attitude of the department should be both interested and friendly and the employee should be made to feel welcome. As problems arise during the course of employment, the employee will then feel free to discuss such problems with the plant physician, with health benefits resulting. The physician in industry has a chance to teach health education both by his personal contacts with the employee and also by means of pamphlets for the employee to take home to read. It is customary to place booklets on diets, good grooming, care of the teeth, heart disease, tuberculosis, and so forth, on the tables in the waiting room. These are frequently brought in by the employee to the nurses or physician with questions as to the applicability in individual cases.

Psychosomatic ailments are often relieved by discussing work or home problems with the industrial physician. These consultations, non-occupational as well as occupational, are an essential part of a well run industrial medical service; and though time consuming, they are mutually beneficial. An employee who comes either for treatment or advice is never hurried but is given whatever time is necessary.

In summary, the services of the industrial medical department are always available to the employees with the goal in mind of promoting the health of these employees.

OCCUPATIONAL HEALTH NURSING

To describe its function more accurately, the industrial nursing division of Employers Mutuals of Wausau, Wisconsin, has been renamed the occupational health nursing division. Members of the division, previously called "industrial nurses," will now be known as "occupational health nursing consultants." The change extends to the quarterly publication which the company issues for the benefit of policyholders. Formerly called *The Industrial Nurse,* this periodical will be published under the title, *Occupational Health.*

"Actually, our nurses always have been consultants to policyholders' nurses and executives on industrial health problems," said Mr. F. W. Braun, vice-president in charge of accident prevention. "First aid and nursing as the average person understands it, that is, helping take care of persons after they are stricken, is only part of it. For many years, our nurses have devoted a major part of their attention to establishing and promoting health, safety, and welfare programs for workers."

Employers Mutuals of Wausau, one of the first companies to specialize in compensation insurance for workers, was the first casualty insurance company to establish a staff of nurses for the purpose of servicing policyholders.

History of Branch Thirty-Eight

As one of the younger branches of AMWA, our history is a short one. After the war years, the medical women in Long Beach felt the need of meeting as a group. Our meetings were purely social get-togethers two or three times a year. Many of us belonged to the Los Angeles Branch but few found time to attend the meetings. At one of our informal gatherings, we were fortunate in having as our guest and speaker Dr. Dorothy Atkinson of San Francisco, who, as President of the Association, presented the value of having a local organization as a part of the national group. This was in the fall of 1950. With her encouragement and the assistance of our Regional Director, Dr. Antoinette LeMarquis of San Diego, our organizational meeting was held December 11, 1950, with 19 practicing women physicians present and 7 guests. Our guests consisted of Dr. LeMarquis and six young women interns and residents of hospitals in this area. With the 19 doctors as charter members, we elected our officers, drew up a simple constitution, and received our charter early in 1951.

Our constitution provides for quarterly meetings. These are usually held in members' homes. One meeting each year has been held with the women lawyers as our guests. Here members of both professions have taken part in discussions of mutual professional problems. Other meetings have been highlighted by medical travelogues, reports from state and AMWA meetings, and even International meetings, as in 1952, when we were represented in France by Dr. Flora Phelps.

In 1954, we felt that we should undertake some project that would be in keeping with the Association's objectives. It was decided, after discussion and committee investigation, to help some medical student from this area to continue her education, and our Loan Fund was inaugurated. Through our graduates from Woman's Medical College of Philadelphia and the dean of the College, we gave a loan this year to a girl from San Diego. The loan is not to bear interest and is to be repaid when she is able to do so. We expect to continue to raise money for our fund.

Our members have been active in medical specialty groups, on hospital staffs and committees, and in women's service clubs, as well as other community activities. One of our Branch past presidents, Dr. Geneva Beatty, has just recently been elected chief-of-staff of Long Beach Community Hospital, an honor she deserves.

In a community with no medical school or large teaching hospital, our members find that the Branch offers a place for pooling ideas and interests and a means of having a closer contact with the other medical women of the country through the AMWA.

—Dorothy Hewitt, M.D.

PHYLLIS C. WALKER, M.D.

Guest Editor

We welcome Dr. Phyllis C. Walker, Guest Editor of the Branch Thirty-Eight issue of the Journal. She is a graduate of the University of Southern California. For two years, she was a resident in internal medicine at Long Beach Veterans Administration Hospital, and at Seattle Veterans Hospital for one year.

Dr. Walker is now in her first year in private practice in Long Beach, and also is attending physician in internal medicine at Los Angeles County Harbor General Hospital. Her memberships include AOA, AEI, and Los Angeles County Medical Association.

World Health Organization

FOUR HUNDRED MILLION PEOPLE, one sixth of the world's population, are infected with trachoma, an eye disease frequently resulting in total blindness. Mass campaigns against this infection have been undertaken under the aegis of the World Health Organization, and the WHO Expert Committee on Trachoma has recently met for the second time in Geneva in order to assess results and indicate new lines of action.

Trachoma is a virus disease causing granulations on the conjunctiva, leading to scar formation, deformity, and often blindness. Where it prevails, trachoma may affect as much as 80 to 100 percent of the population with disastrous economic and social consequences. It is a tremendous health problem, and has been reported in every part of the world. Today, only Europe and North America can be considered as relatively safe from it.

The fight against trachoma has been going on for years, and became an international undertaking when the World Health Organization was requested by its member countries to convene the first WHO Expert Committee on Trachoma and to assist in the first mass campaigns against the disease. These campaigns, waged in Egypt, Tunisia, Morocco, Formosa, and elsewhere have proved that trachoma can be cured by a combination of antibiotics and sulfa drugs.

The scheme of treatment recommended by the WHO Committee has proved its efficacy during the last three years against all the forms of trachoma prevailing in different parts of the world. Figures for the most important campaigns are as follows: 1,200,000 patients under treatment in Formosa, 2,200,000 in Morocco, and 250,000 in Tunisia.

"Combat trachoma by preventing the conjunctivitis epidemics which prepare the ground for trachoma and which are much easier to attack." This was the opinion of the members of the WHO Expert Advisory Panel on Trachoma.

In several other countries, proof of this intimate connection between the two diseases had already been observed. In an Egyptian village, Dr. R. P. Wilson observed fifty children from birth onwards. They had all contracted the disease by the age of one year, and in every case the onset of the disease had been preceded, if not concealed, by an attack of conjunctivitis due to Koch-Weeks bacillus.

The Committee noted that the cost of trachoma treatment was lowered as control projects became mass campaigns involving large groups of people, and also that research work had contributed to reduced costs by making treatment more easy. For instance, it was originally believed that four daily applications of antibiotic ointment were necessary over a period of two months, but new evidence indicates that two daily applications are sufficient.

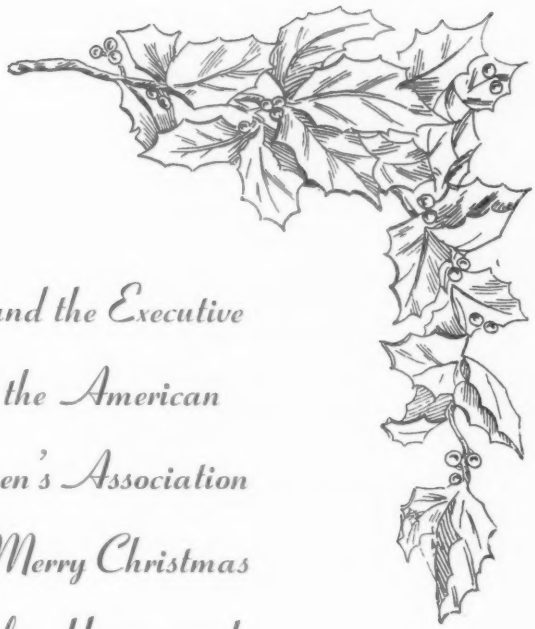
Two among many in south Morocco. They are blind, both men. In public places they recite from the Koran, they recount old tales, live on the alms they receive. The boy, sleeping in the noon heat, is their eyes; he guides them, serves them and sometimes he learns their "trade."

The Committee further recommended that antitrachoma projects should not be isolated efforts, but should be integrated into the normal activities of a country's public health service. Four essential stages in the development of trachoma control are described in the Committee's report: preliminary survey, pilot projects trying various techniques, the mass campaigns itself, and finally integration of trachoma work in the public health service.

Simple criteria for the cure of trachoma were also laid down by the Committee for use in the evaluation of mass campaigns, as well as more meticulous and scientific procedures for individual examinations and for immigration requirements.

Finally, the Committee received various reports revealing the existence of trachoma in countries where it had not been previously noted, such as in some territories of Western Australia where up to 50 percent of certain population groups are affected.

American Medical Women's Association



The President and the Executive Committee of the American Medical Women's Association wish you a very Merry Christmas and a supremely Happy and Successful New Year!

AMWA Plan of Work
1955-1956

I. Industrial Medicine
The theme for special emphasis in National and Branch Programs.

II. Scholastic Awards
To women medical students graduating with exceptional scholastic records.

III. Scholarship Loans
An important source of financial assistance for qualified women medical students.

IV. Opportunities for Medical Women
Listings of part time and full time positions open to women physicians.

V. General Fund of the Association
Contributions needed to establish a reserve fund to be used for general expenses of the Association.

VI. Organization and Membership
Need for more members and new Branches urgent.

VII. American Women's Hospitals and Woman's Medical College of Pennsylvania
Contributions are solicited to continue and expand the work of these fine organizations.

VIII. Library Committee and Association Archives
Plans for a new library at the Woman's Medical College of Pennsylvania are progressing and contributions are needed. This building will house, in addition to the existing collection of medical literature, the archives of the AMWA. Historical material is wanted.

IX. International Good Will
To be fostered by hospitality to foreign women students, house staffs, and visitors.

X. Medical Women of the Year
An outstanding woman physician is selected by each Branch to be honored at the Mid-Year Board Meeting.

XI. Essay Contest for Medical Students, Interns, and Residents
Title: "How the AMWA Can Help Me in the Pursuit of My Career."

XII. Upholding the Objects of the Association

Announcing

$100 CASH PRIZE

To the woman medical student, intern or resident who writes the best essay on the subject, *How the American Medical Women's Association Can Help Me in the Pursuit of My Career*

Second Prize—$50 Third Prize—$25

The Object: One of the most important functions of the AMWA is to aid women medical students and to assist women physicians in postgraduate work

We Want to Know: What your problems are
How we can help
Where we succeed and where we fail in our efforts to make the study and practice of medicine easier for you as a young woman physician

Be honest in your evaluation
Criticize where necessary
We can swallow a pill—with or without sugar coating

To Participate: Write an essay of 100 to 500 words on the above subject
Send before April 1, 1956, to
Ruth Hartgraves, M.D.
American Medical Women's Association, Inc.
1790 Broadway, New York 19, N.Y.

Prizes will be awarded in June 1956

RUTH HARTGRAVES, M.D., *Chairman*
Essay Contest

INVITATION TO ALL MEDICAL WOMEN

Plan to attend the Los Angeles County Medical Association's eighty-fifth anniversary convention on January 3, 4, and 5, 1956, Biltmore Hotel, Los Angeles. Attend the breakfast January 4 at the County Medical Building planned for you by Branch Twenty-Three of the AMWA. Dr. Nadina Kavinoky, who returned recently after presenting a paper at the Fifth International Congress on Planned Parenthood held in Tokyo, Japan, will be the guest speaker. Reservations will be taken by the medical women's representative at Convention registration.

—ALETHEA M. DOLLINGER, M.D., *Program Chairman*
Branch Twenty-Three, Los Angeles, California

Medical Women's

1956 International Tour 1956

An International Tour is being arranged in conjunction with the MWIA Council Meeting which will be held in Burgenstock, Switzerland, from September 21 to 24, 1956. The Tour will visit the Scandinavian countries (including Iceland and Finland), Western Germany, Switzerland, Alsace-Lorraine, and Luxembourg. If circumstances permit, an alternative itinerary to include Moscow and Berlin can be arranged. Although much ground will be covered, the trip will not be arduous, since most of the travel will be by special bus; which will eliminate the bother of meeting train schedules, the nuisance of baggage transfer, and other travel annoyances. Travel by bus also permits visits to many places which cannot be included on train routes, and allows the travelers to see more of the native countryside. There will be a courier to manage accommodations, customs, visas, and similar necessary details.

The Tour begins on August 31, 1956, with flight from Idlewild, New York, via Icelandic Airlines to Reykjavik, Iceland (1), for a day of sight-seeing and a night in the Arctic Circle; then by plane to Oslo and a four day trip through the Norwegian fjords (2) by boat and special bus; across Sweden to Stockholm; from which the Tour will proceed to Turku, Finland, by overnight boat, by bus to Tampere, and a boat ride on the "Silver Route" to Aulanko for the night; the next morning to Helsinki (3) for two days, then back to Stockholm by overnight boat and a day of sight-seeing; thence by boat train to Denmark and Copenhagen (4). From this point on, there will be a special bus which will transport the Tour members to Lucerne, Switzerland, by way of Hamburg (5), Hanover, Cassel, Frankfurt, Heidelberg, Baden-Baden, the Black Forest, and Konstanz, stopping for meals and overnight at interesting spots along the way. After Konstanz, the Tour will continue by bus to Zurich and Lucerne, arriving on the evening of September 20 for the MWIA meeting at Burgenstock the following day (6).

International Association

After the Council Meeting, the Tour will be resumed with a trip over the Alps to Interlaken, and by special bus along the Lake of Thun to Bern and to Basel. From Basel, it will go through Alsace-Lorraine to Strasbourg and then to Luxembourg, where the plane via Iceland will be taken for the return trip to New York, arriving on the morning of October 1.

For those who prefer to cross the Atlantic by boat, individual arrangements will be made so that the travelers by sea will meet the travelers by air in Oslo. Also, on the return trip, transportation from Luxembourg back to New York via Brussels, Paris (Havre), or other ports will be arranged according to the desires of the individual.

The alternative trip to USSR will begin with a plane trip from Helsinki (September 11) to Leningrad and to Moscow for a two to three day visit; then by plane to Berlin for a day and a night, leaving for Frankfurt by plane to rejoin the group for travel to Heidelberg.

On the Tour, places of medical interest will be visited and meetings will be held with the medical women of the country. Members of the Tour having preferences for special clinics or hospital visits will be put in touch with similar specialists in the country being visited. Final arrangements will depend on the number in the party and on their special interests. Friends and husbands are invited to participate. It will be greatly appreciated by the organizer of the Tour and the agency making the arrangements if those expecting to take the Tour will communicate with us as soon as possible so that we may make the most agreeable arrangements and provisions for individual interests.

If interested, please write for details as soon as possible to Ada Chree Reid, M.D., Past President, MWIA, 118 Riverside Drive, New York 24, New York.

DOROTHY HEWITT, M.D.

HER INTEREST in the welfare of the young women doctors in her community makes it natural that Dr. Dorothy Hewitt should have been instrumental in the organization of the Long Beach Branch of the AMWA. Her Pennsylvania Dutch heritage is demonstrated in her tireless efforts for womankind. She began life in Los Angeles, the daughter of a successful practicing woman doctor, and grew up in Long Beach, spending her after-school hours browsing and working in her father's bookstore. At Pomona College, her capabilities for leadership were evident.

She studied medicine at Stanford University. Following an internship and residency at Children's Hospital in San Francisco, she spent a year in the city maternity service of Los Angeles. Her love of obstetrics led her to spend some time with the Frontier Nursing Service, riding horseback over the hill country of Kentucky to deliver babies in backwoods cabins.

She then returned to Long Beach and began general practice; although interested in obstetrics and gynecology, she did not limit her practice to this field until 1942. After the war, Dr. Hewitt spent a year in the Chicago Maternity Center, and became a diplomate of the American Board of Obstetrics and Gynecology in 1949. She is a Fellow of the International College of Surgeons, and a founding member of the American Academy of Obstetrics and Gynecology.

She served the Long Beach Community Hospital as chief of staff in 1943, and has been chairman of its section of obstetrics and gynecology for several different terms. Additional responsibilities are as consultant at Long Beach General Hospital and Norwalk State Hospital.

A woman of broad interests, Dr. Hewitt is a member of PEO and the Soroptomists; she has served the Soroptomists in many capacities, including the presidency in 1939. She was largely responsible for starting a home for underprivileged children; this has since led to the establishment of a foundation which also provides scholarships for deserving women in many fields of endeavor. She is presently raising funds for the construction and maintenance of an International House at The Long Beach State College.

Still, she finds some time for her hobbies of stamp collecting, gardening, ranching, and cattle breeding.

Most generous and selfless individuals do many things which will never be known. There are those who will never know that it was Dr. Hewitt's helping hand that gave them their education. She maintains two scholarships also. One is at Stanford, the "Jessie C. Langford," in honor of her mother, for needy women medical students. The other is at Pomona College.

One close friend who has know Dr. Hewitt from childhood has said that people always seemed to turn to her, whether it was for counsel, or to have a cut finger bandaged. This attribute has made her a "big sister" to many members of our chapter, and has made us feel that she is our most outstanding doctor.

—GENEVA BEATTY, MD.

News of Women in Medicine

DISTRICT OF COLUMBIA. Dr. Dorothy D. Dowd presided at one of the sessions of the twenty-fifth annual scientific assembly of the Medical Society of the District of Columbia. Dr. Dowd is second vice-president of the Society.

Dr. Grace Guin and Dr. Enid F. Gilbert, and others, presented a scientific exhibit entitled "Abnormal Hemoglobins." . . . Dr. Angella D. Ferguson and Dr. Harriette M. Clark exhibited "Clinical Aspects of Sickle Cell Anemia in Children." . . . Dr. Louise Warner demonstrated "The Surgical Anatomy of the Facial Nerve."

MAINE. Dr. Esther M. Kennard of Portland was elected secretary-treasurer of the Maine Medical Association.

MARYLAND. The department of psychology, Springfield State Hospital, Sykesville, announces that the third annual Springfield Lecture has been renamed the Virginia Beyer Lecture in honor of the late Dr. M. Virginia Beyer, former clinical director of the hospital. The first Virginia Beyer lecturer, Dr. Stuart C. Miller of the Austen Riggs Center, Stockbridge, Massachusetts, spoke on "Contemporary Psychoanalytic Ego Psychology."

Dr. Katherine K. Rice has been appointed medical director of Linwood Children's Farm, a new institution for emotionally disturbed children, which opened June 27, 1955, in Ellicott City. Founded as a private, nonprofit institution, it is intended as both a research and treatment center for emotionally ill children between the ages of 3 and 10 from Washington and Baltimore, regardless of race or religion. Dr. Rice is a member of the research staff of Johns Hopkins Psychiatric Clinic and is an instructor at Howard University. She is also consultant psychiatrist to Children's House.

NEW JERSEY. Dr. Evelyn Ivey of Morristown is president-elect of the New Jersey Branch of the American Psychiatric Association for 1955-1956.

Dr. Maude V. Vance is chairman of the general practice section of the New Jersey Academy of Medicine.

NEW YORK. The first of a series of grants for research in cystic fibrosis was recently made by the Cystic Fibrosis Association to the Presbyterian Hospital at the Columbia-Presbyterian Medical Center. The association was organized by a group of 35 parents of children with cystic fibrosis, who early this year began a fund-raising campaign, and who, on April 1, 1955, officially organized the Cystic Fibrosis Association. Their membership has more than tripled and now includes parents from New York, Connecticut, and New Jersey. The association's headquarters, opened early in June, are in the Hotel Martinique, Broadway and 32nd Street. Research work under the grant will be directed by Dr. Dorothy H. Andersen, associate attending pathologist and associate professor of pediatrics, Columbia University College of Physicians and Surgeons.

Dr. Helen M. Wallace, professor and director of the department of preventative medicine at New York Medical College, received the annual award for medicine from the United Order of True Sisters at a luncheon on November 18, 1955, at the Waldorf.

Dr. Elizabeth P. Olmstead of Buffalo is the newly elected president of the Buffalo Ophthalmologic Club.

PENNSYLVANIA. Dr. Elizabeth V. Lautsch, McGill University Faculty of Medicine, Montreal, Canada, has joined the faculty of the Woman's Medical College of Pennsylvania as associate in pathology.

Dr. Mollie A. Geiss, professor of pathology, Woman's Medical College of Pennsylvania, has resigned after 33 years of service on the faculty.

Lack of information and unreasonable prejudice in the United States have prevented many American physicians from using the BCG vaccine as part of a program for the control of tuberculosis, Dr. Anne B. Wagner, chief of the maternal and prechool section of the Pittsburgh Department of Public Health, reported before the one hundred fifth annual session of the Medical Society of the State of Pennsylvania, held in Pittsburgh.

WASHINGTON. Dr. Lois Frayser of Seattle was elected secretary-treasurer of the Washington State Allergy Society.

General

A Medical Mission Sister who performed some 5,000 surgical operations in East Pakistan received one of the highest distinctions in medicine when she was named a Fellow of the International College of Surgeons. Sister M. Benedict Young, M.D., received the honor at the twentieth annual congress of the College.

Seven years a missionary in East Pakistan, Sister Benedict qualified for the distinction through advanced medical studies and continued practice in general surgery. The operations often were done under primitive conditions and for native peoples who mistrusted medical assistance. Here on a brief visit, the 37 year old Sister was among 700 surgeons awarded the fellowship at a formal convocation in the Academy of Music. She is the first nun to receive the honor, and one of the few women recipients.

A graduate of Woman's Medical College, 1946, most of her surgery was performed at Mymensingh in a hospital conducted by the Medical Mission Sisters. They provide professional medical care for medically underdeveloped countries. In East Pakistan, a country of 45 million people, there is only one doctor for every 20,000 people. Pakistan is less than one percent Christian. The Sister-surgeon, who speaks fluent Bengali, expected to depart for East Pakistan late in September.

International

Greece. A Greek gynecologist, Dr. Brysiis Samara, was given the two thousandth fellowship awarded in Europe by the World Health Organization and is now studying the medical application of radioistopes at the Royal Cancer Hospital, London, and at Harwell, England. Her fellowship lasts for six months, and on return to her country, she will be placed in charge of the radioisotopes department at the Alexandra Hospital in Athens. It will be the first department of its kind in Greece, and Dr. Samara should accordingly play an important part in the development of this new branch of clinical medicine in her home country.

Her fellowship is typical of the many others: at the request of the government, WHO arranges and finances study abroad for an experienced health worker, who after completing the period of study may be expected to make a definite contribution to the improvement of health at home.

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THESE WERE THE FIRST

Dr. Elizabeth Angela Riley, of Chelsea, Massachusetts, graduated from Tufts College Medical School in 1897, and was superintendent and physician in chief at Woman's Charity Club Hospital, now Massachuetts Women's Hospital. In 1899, she was the first woman appointed to the teaching staff of Tufts College Medical School as instructor in gynecology and obstetrics. Dr. Riley founded the Bay State Hospital, Boston, Massachusetts, and practiced there for ten years. In her will, she endowed two scholarships for medical women, known as the Elizabeth A. Riley Scholarships, to Tufts Medical College.

Dr. Olga Cushing Leary, graduate of Tufts College Medical School, was the first woman faculty member of her alma mater, having been made assistant professor of pathology and bacteriology in 1909.

Dr. Ellen E. Mitchell was the first woman physician sent out as a missionary by the Baptists of America. At the age of 30, she served as an army nurse in the Civil War, and then studied medicine at the Woman's Medical College of New York (now a part of Columbia University), where she graduated in 1871. Later, Dr. Mitchell practiced in Fond du Lac, Wisconsin, and at the age of 50 went to Burma as a missionary, where she served for 22 years.

Dr. Angenette Parry of Rome, New York, graduated in 1891 from the Woman's Medical College of the New York Infirmary, from 1891 to 1896 was the first intern and then was a resident at the New York Infant Asylum, and went abroad to study for three years in Vienna. Dr. Parry practiced in the City of New York and for 20 years was attending obstetrician at the New York Infirmary. She was a Past President of the American Medical Woman's Association and of the New York State Society of Medical Women. Dr. Parry was active in many organizations and a charter member of the Travelers' Aid Society. She spent three years in travel to study medical and social conditions and for four years was a volunteer worker with the American Women's Hospitals during their work with refugees at Kokkinia, Greece. For this service she received the following decorations: Medaille de la Rennaisance from France, the Silver Cross of the Savior of the Greek Government in 1931, and the Red Cross of the Czar from Russia in 1938.

—Elizabeth Bass, M.D.

Journal of the AMERICAN MEDICAL WOMEN'S ASSOCIATION

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VOLUME 10

January - December 1955

Published Monthly
at 136 4th Ave., N., Nashville, Tennessee
By the American Medical Women's Association, Inc.

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January 1956

Dr. Jane Schaefer is Guest Editor for the special Branch Thirty, Upper California, issue of the JOURNAL, to appear in January. A variety of articles will be presented, and material about medical women in Upper California.

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"Psychiatric Possibilities in Pediatric Gynecology," Elinor B. Harvey, M.D.

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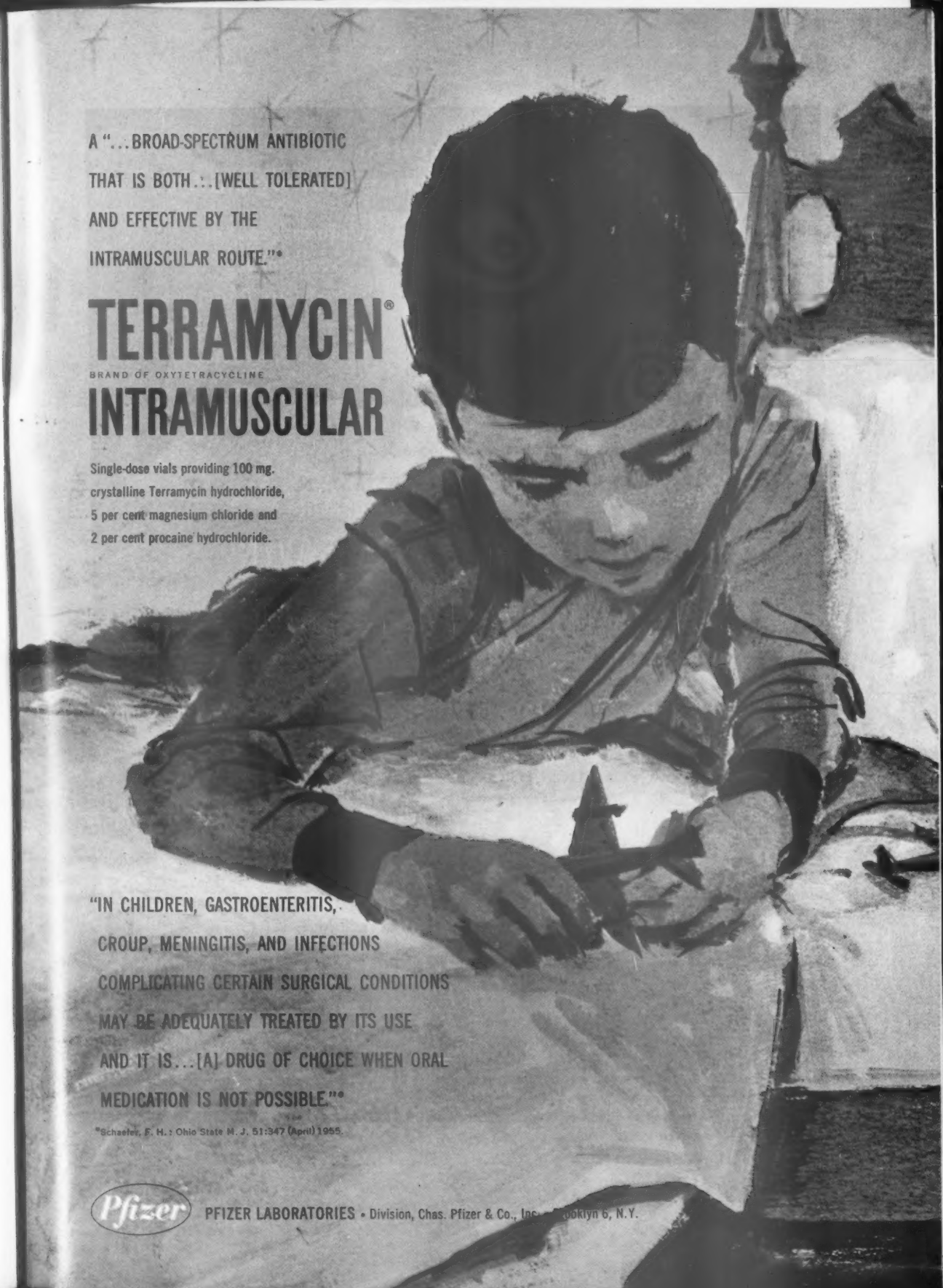
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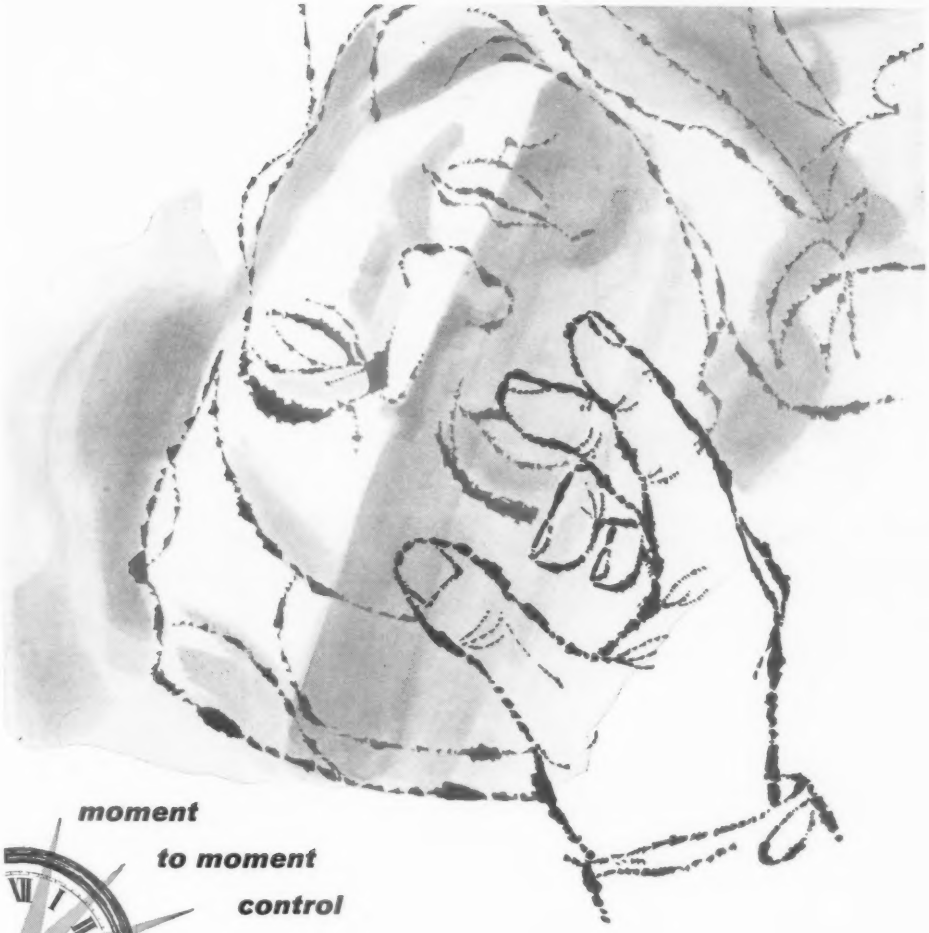

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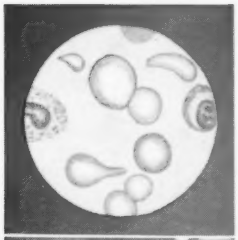

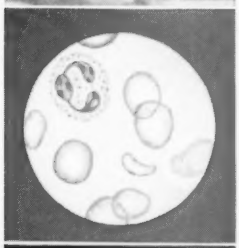

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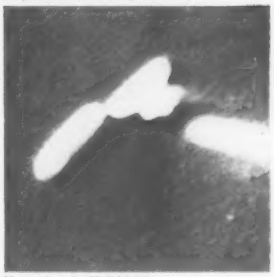

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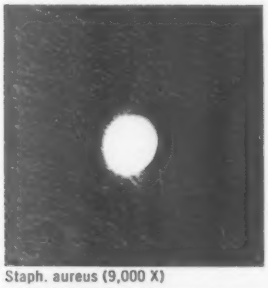

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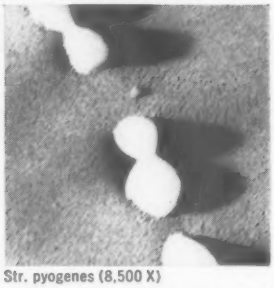

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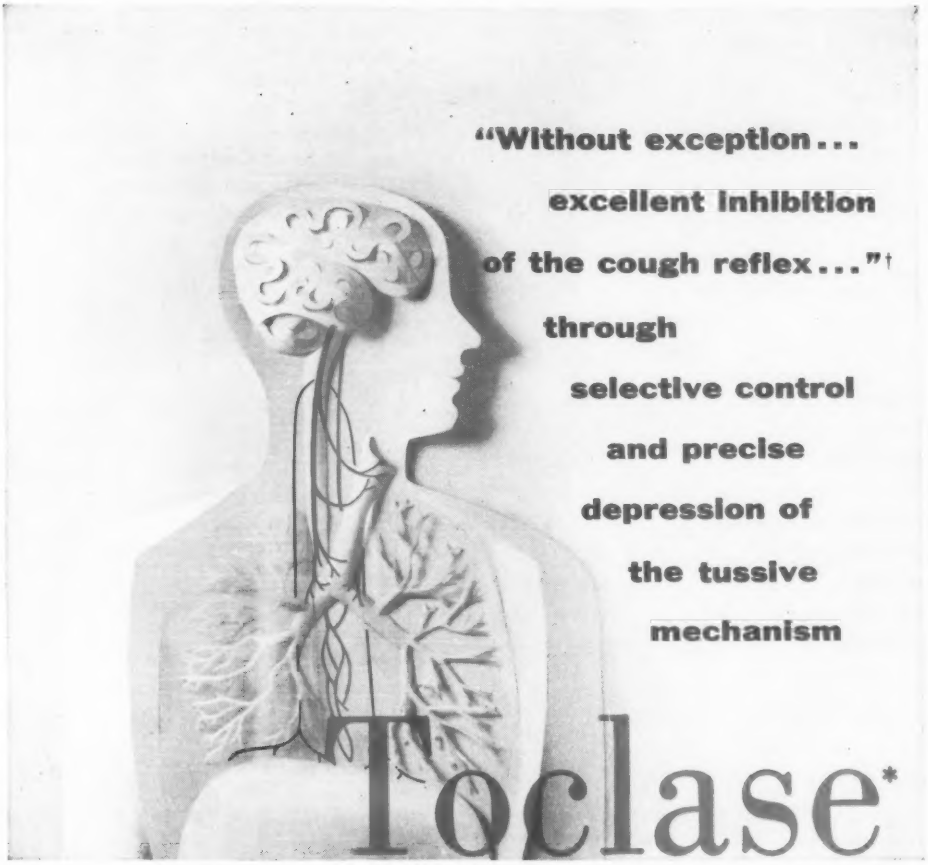

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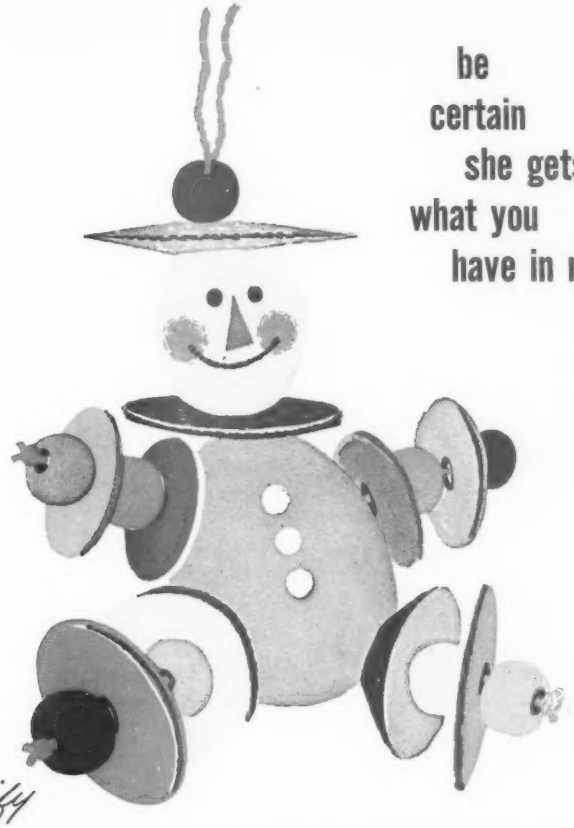

be certain she gets what you have in mind!

Specify

PRENATAL CAPSULES LEDERLE

It's that important last word which assures your patient the Lederle prenatal formula—a well-balanced supplement of vitamins and minerals indicated for mother and child throughout pregnancy and lactation. PRENATAL CAPSULES Lederle are dry-filled, not oily or pasty, and have a pleasant vanilla flavor.

Dosage: 1 to 3 capsules daily Package: bottles of 100 and 1,000

Each capsule contains:

Vitamin A	2000 U.S.P. Units	Ascorbic Acid (C)	35 mg.
Vitamin D	400 U.S.P. Units	Folic Acid	1 mg.
Thiamine Mononitrate (B_1)	2 mg.	Calcium (in $CaHPO_4$)	250 mg.
Riboflavin (B_2)	2 mg.	Phosphorus (in $CaHPO_4$)	190 mg.
Niacinamide	7 mg.	Dicalcium Phosphate Anhydrous ($CaHPO_4$)	869 mg.
Vitamin B_{12}	1 mcgm.	Iron (in $FeSO_4$)	6 mg.
Vitamin K (Menadione)	0.5 mg.	Ferrous Sulfate Exsiccated	20 mg.
		Manganese (in $MnSO_4$)	0.12 mg.

LEDERLE LABORATORIES DIVISION *AMERICAN Cyanamid COMPANY* Pearl River, New York

Lederle

Performance . . . Response

SALCORT*

Salcort performance stimulates a dependable response in arthritic conditions; early functional improvement and a sense of well being are significant. Smaller doses of salicylates and cortisone combined produce a therapeutic response equivalent to that of large doses of cortisone . . . side reactions are eliminated and continuous therapy is permitted. Salcort presents no withdrawal problems.

Each tablet contains:

Cortisone Acetate	2.5 mg.
Sodium Salicylate	0.3 Gm.
Aluminum Hydroxide Gel, dried	0.12 Gm.
Calcium Ascorbate (equivalent to 50 mg. Ascorbic Acid)	60 mg.
Calcium Carbonate	60 mg.

*U. S. Patent No. 2691662

professional literature and sample available on request

THE S. E. MASSENGILL CO. BRISTOL, TENN.

For bigger appetites and better health—at any age

Redisol®

CRYSTALLINE VITAMIN B_{12}

MAJOR ADVANTAGES: Helps patients gain weight. Stimulates hemopoiesis. Elixir and Tablets readily blend with milk, juices and infant formulas.

Supplied as REDISOL Soluble *Tablets:* 25, 50, 100 *mcg.*; cherry-flavored *Elixir:* 5 *mcg.* per 5 cc.; *Injectable:* 30, 100, 1000 *mcg.* per cc.

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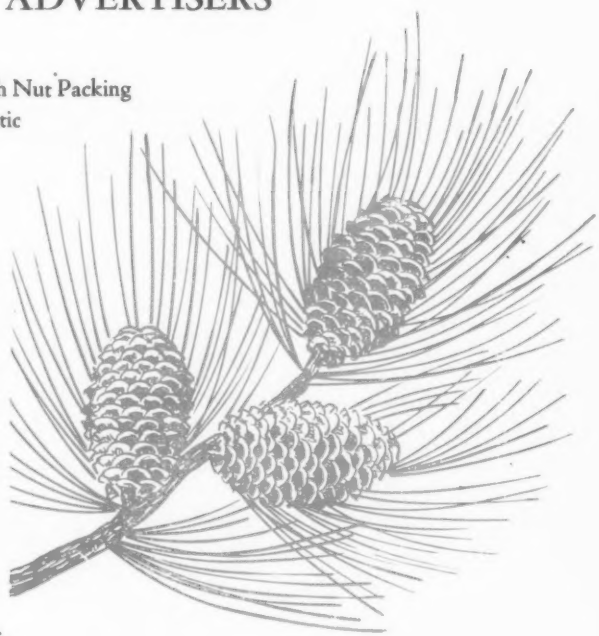


not all prenatal supplements increase blood calcium levels

By their very nature, calcium phosphate supplements tend to deplete rather than increase calcium blood levels. New evidence[1-5] shows that due to calcium phosphorus antagonism, the amount of utilizable calcium may actually be depressed, leaving blood levels lower than before ingestion.

a phosphate-free calcium

Calcisalin, to avoid unwitting calcium depletion, provides the usable form of calcium lactate. It also supplies aluminum hydroxide gel to help remove excess dietary phosphorus.

a complete prenatal supplement

Designed for use throughout pregnancy, Calcisalin assures vitamin and mineral benefits.

The daily dose of Calcisalin provides:

- *phosphate-free calcium lactate*
- *phosphorus-eliminating aluminum hydroxide*
- *vitamins and iron as recommended for pregnancy*

Dosage: Two tablets 3 times a day.

Available in bottles of 100 and 300.

References: 1. Illinois M. J. *105*:305 (June) 1954. 2. Obstet. & Gynec. *1*:94 (Jan.) 1953. 3. Bull. Margaret Hague Maternity Hosp. *6*:107 (Dec.) 1953. 4. Missouri Med. *51*:727 (Sept.) 1954. 5. J. Michigan State M. Soc. *53*:862 (Aug.) 1954.

Calcisalin®

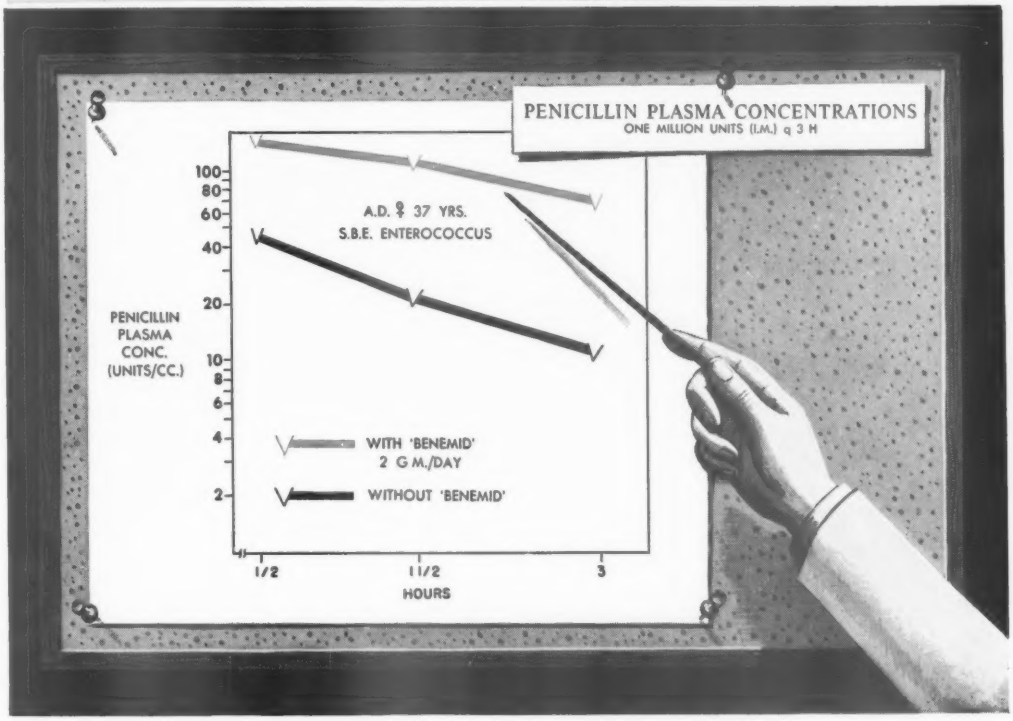
WARNER-CHILCOTT

Remanden.®

PENICILLIN WITH BENEMID®

expands the range of penicillin action

MAJOR ADVANTAGES: Supplements initial intramuscular penicillin. Given alone, produces plasma penicillin levels comparable to those of intramuscular penicillin.[1]



The 'Benemid' in REMANDEN raises plasma penicillin levels[2]

The 'Benemid' component in REMANDEN "increases penicillemia by 2 to 10 times and infections ordinarily regarded as untreatable with penicillin have been successfully managed."[2] With REMANDEN most of the penicillin is recirculated without interfering with normal renal function.

The oral penicillin of choice in many common infections, REMANDEN may be used as adjunct to parenteral therapy of fulminating infections.

Supplied. Tablets, REMANDEN-100 and REMANDEN-250, providing 100,000 or 250,000 units of potassium penicillin G with 250 *mg.* of 'Benemid.'

NEW *Suspension* REMANDEN-100 (in 60 cc. bottles)—one tsp. equals one REMANDEN-100 tablet.

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References: 1. Antibiotics & Chemotherapy 2:555, 1952. 2. A.M.A. Exhibit, June 1951.

FOR PRENATAL SUPPLEMENTATION

YOU CAN CHOOSE BETWEEN THESE 2 EASY-TO-TAKE FORMULAS

alike... yet different!

NEW

Natalins-PF*

Mead *phosphorus-free vitamin-mineral capsules

Natalins

Mead prenatal vitamin-mineral capsules

One Natalins–PF capsule t.i.d. or 1 Natalins capsule t.i.d. supplies vitamin A 6000 units; vitamin D 600 units; ascorbic acid 100 mg.; thiamine 3 mg.; riboflavin 4.5 mg.; niacinamide 30 mg.; pyridoxine HCl 3 mg.; calcium pantothenate 3 mg.; folic acid 1 mg.; vitamin B_{12} (crystalline) 1 mcg.; iron (from ferrous sulfate) 22 mg.

Here's the difference

One Natalins–PF capsule t.i.d. supplies calcium carbonate to provide 450 mg. of phosphorus-free calcium. One Natalins capsule t.i.d. supplies veal bone ash to provide calcium 375 mg., and phosphorus 188 mg.

both alike
in patient acceptability

small size...
easy to swallow

small dosage...
one capsule t.i.d.

economical, too

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